THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
The Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · The Railway Official Gazette

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.
Telephone: WHitehall 9233 (12 lines) *Telegrams: "Trazette Parl, London"*

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BRISTOL: 8, Upper Berkeley Place, Clifton

Annually £4 10s. by post Single copies, Two shillings.
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Vol. 97] FRIDAY, OCTOBER 10, 1952 [No. 15

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The Menace of Rising Wages

AN announcement this week that the North British Locomotive Co. Ltd. has failed to secure a £3,000,000 contract from the Indian Railways because of the inability of the British manufacturer to quote firm delivery prices is an illustration of the dangers which are inherent in the pressure of the engineering trades unions for higher wages. The order is reported to have been placed in Belgium, where the locomotive builders were able to give a firm price. There can be no doubt that, in the present state of world markets, British manufacturers of heavy engineering equipment are placed at a grave disadvantage in comparison with their continental and other competitors by the need to keep in mind the possible repercussions on cost of wage demands by the unions. In an effort to safeguard themselves against contingencies which experience has taught them are only too real, they are compelled to embody in their contracts "escalator" clauses which provide for a higher price to the purchaser in the event of an increase in production costs resulting from higher wages or advances in the price of materials. This practice became common during the war and was continued afterwards without any grave untoward effect so long as the seller's market continued. Conditions have undergone a considerable change in recent months and there is no doubt that in the future British manufacturers will face increasing competition for overseas markets. This is the principal reason why the employers so far have resisted the demands of the engineering unions for higher wages. To grant their claims would result in a rise in costs which would put the prices of many British products well above world levels. The loss of trade which inevitably would result would react directly on the employment of the trade unionists who are now pressing for more pay. Apart from the inflationary effect on the general price level of so large an aggregate wage claim the loss of orders undoubtedly would lead to considerable unemployment. The redundant workers would not only have lost their earning power but would also be faced with higher prices for their ordinary needs.

Amendment of the Transport Bill

THE forthcoming Transport Bill, which has aroused such speculation and controversy, received further attention in a speech by Viscount Swinton, Chancellor of the Duchy of Lancaster and Minister of Materials, at the Public Transport Association luncheon last week. In producing its Transport Bill during the next session, he said the Government had one object; that was to enable British transport to give the most efficient service to the public, trade and industry. To this end he believed it was a good plan to publish ideas and mould and improve them in the light of practical and constructive criticism. All that criticism would be the more constructive if it had something definite to work on. In keeping ideological prejudice out of business matters Viscount Swinton believed he was at one with most people; the best guide was practical experience, honestly learned and applied without prejudice. That was what they would seek to do in transport and it would be foolish and wrong to do other in a service of such importance. As we have frequently pointed out, there is ample scope for amendment and amplification of the proposals given in the White Paper on Transport, but few would disagree with Viscount Swinton's conclusions and it is to be hoped that the moulding and improvement in the light of practical and constructive criticism will rectify the situation. Further reference to the luncheon is made elsewhere in this issue.

Steel Production Record

PRODUCTION of steel in Britain in September at the record rate of 17,149,000 tons, some 9 per cent. more than the rate for September of last year, gives good reason to hope for production of at least 16,000,000 tons of steel this year; this would slightly exceed the total for 1951, though there is no chance of beating the record total of 16,293,000 tons for 1950. Greater availability of steel and the prospect of further increases in supplies lead to doubts as to the efficacy of the existing allocation scheme, based on past production, which has little reference to the constantly varying demands of industries supplying home and overseas markets. It may be too early yet to terminate the allocation scheme, but it should be reconsidered soon, though increased production must result in its abolition before long. Meanwhile, a review should be made of allocation of steel to the railways, which have had for months past to restrict their rolling stock building programme—to the detriment of efficiency and of sound finance in the matter of renewals—and to the industries which are of such importance to the national economy in supplying material to railways overseas.

Air and Surface Travel to the Continent

INTRODUCTION next Spring of tourist air fares between Britain and the Continent leads to speculation on the future standard of amenities on air services which compete with rail and steamer travel. The new airport service charge of 5s. for passengers joining international flights at Northolt or London Airport, the additional charges for motorcoach travel between terminal and airport at London and Paris, and the introduction next year by British European Airways of aircraft on tourist services seating four passengers abreast are steps towards the elimination of frills so as to lower air fares which was mentioned at the International Air Transport Association conference at Geneva last month. Meanwhile an opposite trend is shown

on the "Golden Arrow" service between London and Paris, where there now are charges which include both Pullman car charges in England and France and meals in the train. These, with the ordinary fares, compare not unfavourably with air fares; the second class London-Paris single fare by "Golden Arrow" with Pullman and meals at £8 8s. 7d. is over £1 cheaper than the ordinary air fare with the terminal charges mentioned, which is only slightly exceeded by the first class "Golden Arrow" inclusive fare. Where surface travel scores is in the luxury of Channel packets and in its reliability in bringing the passenger punctually to his destination in almost any weather.

Claims Prevention

THE account of claims prevention methods on British, French, and U.S.A. railways, of which the first part appears elsewhere in this issue, shows much uniformity of practice. Standard packaging, which not only minimises damage but is conducive to palletisation and more economic loading, is encouraged by the preferential rates in France for goods so packaged. The American use of photography and post mortems in the education of staff and traders in loading has much to commend it. In the prevention of rough shunting impact recorders are useful, but the French National Railways bonus scheme for yard staff seems cumbersome, though this is denied by the S.N.C.F. The greatest differences are in dealing with loss (including theft and pilferage), the biggest problems in Britain, whereas damage is the major cause of claims in France and U.S.A. Circumstances beyond the railways' control, such as shortage of consumer goods, have contributed to the problem of theft in Britain. In France the self-discipline of railwaymen in the matter of justified punishment has lightened the task of the S.N.C.F.; whether a stronger policy elsewhere would produce similar results is hard to say. Furthermore, the French practice of making the prevention of loss and damage the responsibility of the traffic departments rather than of the railway police seems to have produced useful results. In no other field is there such immediate financial reward for sustained effort by all concerned.

Brussels Junction Railway

THE inauguration last Saturday by the King of the Belgians of two of the six tracks of the Brussels Junction Railway, described on other pages this week, completes the first phase of a combined railway and town planning scheme which in its present form dates back to 1901. Work began after ten years' delay before the first world war, which with the subsequent shortage of materials, ceaseless controversy on the merits of the project, and the depression of the 1930s, postponed progress until the Royal Assent was given in 1935, but war soon afterwards again delayed the work. The scheme is based partly on the fact that Brussels is not big enough to justify a self-contained urban underground system, though conveyance of passengers by rail to the heart of the city is highly desirable because of street traffic congestion; such conveyance obviously is to the advantage of the Belgian National Railways, which have profited in their operation of the new line by recent progress in electric traction and by co-ordination with their main-line and suburban electrification. The project involves reorientation of rail and street traffic plans and much property development in Brussels, in which respect it is remarkable as not being the direct result of damage during either war.

Station Catering

THE problems and achievements of the Hotels Executive in providing refreshment facilities at stations and passenger embarkation points and in trains where a restaurant or buffet car is not justified, are outlined by Mr. C. W. Roundell, Assistant Refreshment Room Superintendent, the Hotels Executive, in an article in the current issue of the *British Transport Review*. What has been done in recent years to improve and to expand these essential amenities of travel is the more remarkable in view of the difficulties faced; these include competing for staff in the labour market under the handicap of long hours and weekend working, the changing eating and drinking habits of the travelling public, the licensing laws, and the shortage of available space in stations, which with the solidity of the premises built many years ago for a public with different tastes, greatly complicates their modernisation and extension. Mr. Roundell explains the reasons for closing some station "dining rooms," and points out the growing number of cocktail bars and other provision for passengers with more luxurious tastes in contrast with the prevailing trend in the direction of station catering at popular prices.

Harder-Wearing Rails

IN an attempt to grapple with the problem of the "shelly" rail—the flaking off of the rail surface as the result of heavy traffic—the University of Illinois, which has been conducting tests on short lengths of rail with a rolling load testing machine, proposes two solutions. One is the heat treatment of rails, and the other the use of a chrome-manganese-vanadium alloy. To Great Britain the former expedient is nothing new, as many thousands of tons of rails heat-treated by the Sandberg sorbitic process have been laid in British tracks, though the process unfortunately has gone out of favour because of the development of an irregular surface hardening that made the running over these rails very noisy. Chrome and manganese also have been used as rail steel alloys here, but not, so far as we are aware, vanadium; as yet no information has been made public as to the percentages of these elements in the U.S.A. test rails, which, so far as the laboratory tests are concerned, have greatly outlasted rails of standard American straight carbon composition. Actually, however, no laboratory test has yet been devised that reproduces not merely the effects of loaded wheels rolling over the rail surfaces, but also the complex stresses constantly set up by the contra-flexure of the rails under load, and the effects of corrosion and of badly balanced locomotives and flats in wheel tyres. Laboratory tests alone, therefore, could hardly be conclusive as to probable rail life.

Electro-Pneumatic at Euston

BY the bringing into service on Sunday last of the new power signalbox at Euston the main stage was reached in the important changes, in hand there for some time past, intended to provide much desired improvements in traffic facilities. For the first time the electro-pneumatic system of point operation has been adopted for a London main line terminus. Except for the old Granary Junction Yard box, Bishopsgate, opened in 1899 and working now with the original frame, and some boxes at and near Clapham Junction, converted from all-pneumatic and still in use, this method of working has been confined in the London area to the Underground lines. The old 288 lever mechanical box at Euston, opened in 1891 with Webb type locking frames, which were replaced in 1906, is being removed to allow new tracks to be laid and some platforms extended, and in due course we shall publish a full account of the scheme in its completed form, which it was announced would cost some £300,000. Further reference to the scheme is made on page 413 of this issue.

First Fluorescent Dimming for Signalbox

APPARATUS for dimming hot cathode fluorescent tubes has been available commercially for some two years, but its first application to signalbox lighting in this country is in the new box at Euston to which we refer in the previous note. The scheme has been planned by the Lighting, Heating, & Water Power section of the Civil Engineer's Department, L.M.R., in collaboration with the General Electric Co. Ltd. Dimming has been adopted so that the lighting can be adjusted at night to the level at which the men have comfortable visibility inside the box, but there is no interference from reflections in the windows

with observing traffic outside. The range of dimming is 53 to 1, which may be wider than experience will show to be necessary, but by providing the maximum there would be full opportunity if required for choosing a satisfactory standard level of illumination for signalboxes. In the new box at Euston the ten 5-ft. 80 w. tubes are controlled by one dimmer operating on the saturable choke principle, but are individually switched. The ability to dim mains voltage fluorescent tubes will enable advantage to be taken of their long life and luminous efficiency, while contributing to settling the question of what constitutes satisfactory night-time illumination for signalboxes.

Locomotive Performance

FOR some time past the Railway Executive has given attention to the economical working of locomotives. Modern locomotives, designed with care and with knowledge born of experience, have been improved in respect of freedom from mechanical defects and in thermal efficiency. Such being the case it is only common sense to attempt to utilise the advances made in thermal efficiency, built into locomotives, when they are in revenue-earning service. To this end tests are being made with representative locomotives to establish their economical working range, and a review of the results of the recently completed tests is given in the first of a series of articles elsewhere in this issue. The particulars given relate to the practical application of the results in formulating economic train schedules, though bringing out at the same time several interesting features of performance. One of these, thermal efficiencies, will not escape notice. Modern steam locomotives, it will be seen, may operate with an overall efficiency of upwards of 8 per cent. This undoubtedly denotes progress, and from this viewpoint narrows the field for improvement with competing forms of motive power.

U.S.A. Railway Equipment Finance

IN 1951, capital expenditure for additions and betterments to U.S.A. railway property reached the record amount of $1,414 million. Only $363 million was spent on roadway and structures. Nearly three times that amount, $1,051 million, was spent on equipment. New passenger vehicles numbered 183; it was intended to add 10,000 wagons a month to the existing stock; because of shortage of steel the total number put into traffic was 87,730; only 18 new steam locomotives were installed, while 4,080 were withdrawn and replaced by 2,540 diesel and electric locomotives. Improvement programmes for 1952 and 1953 involve further expenditure of about $1,140 million on new wagons and of $1,000 million on diesels. Two factors will settle how far these ambitious plans can be fulfilled. The first is the supply of steel and other essential materials; the second is the arrangement of finance.

The stoppage of the steel works for 52 days in June and July defeated the railways' project for increasing wagon stock this year. During July, the number of wagons withdrawn exceeded the number installed by 1,207. The stock on August 1 was 27,500 above 1951, but that was only half of the gain contemplated by the Association of American Railroads. Many wagons which should have been scrapped were kept in traffic. The "awaiting repairs" percentage rose to 6 and reduced the additional number of serviceable wagons to 16,850. No immediate harm was done, owing to a decrease in wagon loadings of 2,275,400, or nearly 9 per cent., during the 34 weeks to August 23, but any sudden increase in traffic may cause a serious wagon shortage.

In July, the railways put one new steam locomotive into service and withdrew 417, while they installed 119 new diesels. During the 12 months to July 31, they scrapped 5,776 steam locomotives and set 2,470 diesels to work. The rate of change to the new motive power has been checked by the steel strike, but should quicken soon, as on August 1 the number of locomotives on order was 1,211 and all but 25 were diesels.

The Association of American Railroads is concerned about the financial situation caused by this wholesale acquisition of new equipment. The credit of the railways does not stand high in these postwar years, and consequently they cannot finance their requirements through sales of capital stock. Accumulated depreciation charges do not go far to meet the cost of equipment procured at a time when prices are 127 per cent. above the 1939 level. Net income, or earnings after charges, was no more than $693 million in 1951 and yielded little surplus after modest dividends were paid to railway stockholders. Net working capital, representing the difference between current assets and liabilities, has been drawn upon to provide funds for improvements so freely that its total declined from $1,659 million at the end of 1945 to about $500 at the end of 1951 and to $431·7 million at May 31, an amount less than the average monthly expenses for which cash must be available. Clearly these liquid reserves cannot be raided again with impunity.

The railways are left with no other means of paying for extensive additions and betterments than borrowing money on the best terms they can negotiate. Since the war borrowings have consisted almost wholly of the issue of short-term equipment trusts, which have been bought largely by banks, insurance companies and financial houses. At the end of the war, the outstanding amount of these equipment obligations was $773 million. By March, 1952, the amount had grown to $2,240 million. As a rule the railways pay down 20 per cent. of the purchase price—often taking the money from net working capital—and then pay off the balance by yearly instalments over a fairly short period. At present the instalment payments amount to about $300 million a year, in addition to interest charged on the unpaid balances. Interest rates advanced recently and the A.A.R. doubts whether this system of borrowing can be expanded without impairing railway credit.

The 1951 report of the Pennsylvania Railroad shows how difficult it is for a railway management to modernise the property when earnings are at a low level. From 1948 to 1951, the Pennsylvania drew up programmes for increasing and improving equipment at a cost of $658 million. The value of the equipment placed in service by the end of 1951 was $522 million, of which the Pennsylvania paid down $149 million, or 28·5 per cent. At December 31 last, its equipment obligations were $288 million, having increased by nearly $84 million in 12 months. The report assured the stockholders that, upon completion of the equipment programme, cash obtained from depreciation would be substantially in excess of annual equipment maturities. The report did not state that the amount of deferred maintenance, largely on permanent way, was $250 million, but mentioned that in February, 1952, 8·8 per cent. of the wagon stock was in need of repair. The percentage should not have been more than 5, but at one stage the Pennsylvania was so tight for money that it cut wagon building and repair programmes severely. The year 1951 produced the largest operating revenue, $1,044·4 million, in the history of the Company, but 88·5 per cent. of that sum was required to meet operating expenses and the premier railway of the States paid a meagre dividend of 2 per cent.

Equally illuminating is the story of the substitution of diesel for steam motive power on the Atlantic Coast Line, extending for 5,470 miles from Richmond (Virginia) through the tobacco producing land to Florida. A progressive scheme was started before the war and at the end of 1950 A.C.L. owned 280 diesel units. In 1951 the railway purchased 279 units and, for all practical purposes, is now completely dieselised. It made no down payment on last year's purchases and during 1952 will have to find over $8 million for instalment payments on equipment obligations. To make the best use of the diesels, the A.C.L. planned to spend about $46 million on track improvements during 1951, but could afford to spend only $33 million. This year it needs additional wagons and passenger cars, but apparently cannot find more than $2·1 million to pay for rolling stock ordered in 1950 and 1951, which will be delivered at early dates. Luckily there are signs that the policy of "going

100 per cent. diesel " will improve the financial status of the A.C.L. before long.

Almost without exception, U.S.A. railway managements are satisfied that substantial economies will result from the use of diesel power, but many of them are worried by the problem of finding dollars to pay for its installation. As recently as April last, the Interstate Commerce Commission said the railways recognised that " the serial maturity of equipment obligations, annually, may prove to be a grave menace to their financial security, particularly if there should be a sharp and sudden recession in the volume of traffic offered." In Great Britain, the former railway companies avoided the risk of any such crisis by providing annual reserves to cover the bulk of rolling stock renewals. There is much to be said in favour of that prudent policy.

East African Railways & Harbours

THE report for the year ended December 31, 1951, of Mr. A. Dalton, General Manager, East African Railways & Harbours, shows that during the year gross revenue again surpassed all records; the figure of £13,411,000 represents an increase of nearly £2,000,000 compared with the previous year. Gross working expenditure was £10,479,000, compared with £8,823,000. Continual anxiety, Mr. Dalton states, was occasioned in 1951 by the rapid dispersal of capital funds; the fall in the value of money and the sharp rise in costs resulted in a reduction in work done and equipment received against given expenditure, and capital funds were exhausted far more quickly than had been foreseen. Although a loan of £23 million was authorised in 1949 and all the funds allocated, only £10·6 million actually was raised in London and local markets; purchases of equipment and works projects provided for in the balance were financed from E.A.R. & H. funds. In 1950, the unprecedented rate of development and the financial situation necessitated another loan, not only for additional locomotives and other equipment, but also for water supplies, improvement of yard facilities, running loops, and so on.

In 1951, a further loan schedule of £3·5 million was authorised for additional rolling stock, but because of the legislative procedure involved, this was a year after the need for the loan had become apparent. Orders for equipment up to the full extent of the amount were placed forthwith. At the end of 1951, a further review of requirements was being completed, which resulted, subsequently, in authority to increase the loan maximum by a further £32·75 million. The magnitude of the efforts made to increase the capacity of the system is shown in the total value of orders, £18·6 million, recently with the manufacturers, in addition to a steady flow of deliveries already effected.

The following are some of the more important operating results in 1950 and 1951, in which latter year ton-mileage and passenger journeys broke all previous records:—

	1950	1951
Railways, steamers, and motor transport—	(Thousands)	
Total train-mileage	7,204	7,992
Passenger journeys	5,936	6,575
Goods tonnage carried	3,302	3,590
	(£ thousands)	
Coaching receipts	1,468	1,676
Goods receipts	7,443	8,576
Total receipts	9,327	10,686
Working expenses	6,297	7,426
Harbours —		
Receipts	2,001	2,555
Expenditure	1,379	1,682

Traffic density over the Kenya/Uganda Section continued to increase at a high rate. Traffic moving up country exceeded by 13 per cent. the record level reached the previous year, despite the fact that, in the first half of the year, weather conditions were the most severe in recorded experience. Transport capacity was increased by the placing in service of 790 units of goods stock. Train operation was hampered not only by the exceptional weather but by widespread water shortages in the second half of the year. An improved timetable was introduced on the K.U. Section on April 1.

In Tanganyika, traffic over the Tanganyika Central Line was seriously impeded during the early part of the year by unreliable locomotive performance, largely because of the number of second-hand locomotives employed. The position was brought under control in the second half of the year and increasing tonnages were handled, with heavy traffic, through to the Belgian Congo. Unreliable locomotive performance also affected operation on the Tanga Line; in the latter half of the year conversion of locomotives to burn oil fuel on this line was begun, with immediate improvement in train operation. The difference between the braking system on the Tanga Line and the Kenya/Uganda Section imposes a severe handicap on wagon distribution; equipment is on order which will make rolling stock interchangeable. Despite all difficulties, the average monthly ton-mile figure over the Tanganyika Section was higher than in any previous year.

A new unified tariff for Kenya, Uganda, and Tanganyika was introduced on October 1, 1951. Almost alone of the world's railways, Mr. Dalton points out, the E.A.R. & H. had kept its charges at prewar level. Subsequent increases in costs mean that the revenue which the new tariff aims to earn and which was fixed as a standard more than a year before it was brought into force, may not remain adequate for long.

Reference is made by Mr. Dalton to 34 Beyer-Garratt locomotives on order for main-line duties, the heaviest locomotives, at 240 tons, ever to work on a metre-gauge railway; they will operate on the heaviest traffic sections, between Mombasa, Nairobi, and Nakuru, which involves lengthening running loops to take the longer trains hauled. Also included in the main-line locomotives on order are smaller Beyer-Garratt locomotives for the lighter rail sections; of these, 12 are to be built in France under licence so as to obtain earlier delivery.

Additional crossing stations are being opened and marshalling yard capacity at vital points such as Nakuru and Kampala is being increased. On the busy section between Nakuru and Eldoret, the 50-lb. track is being relayed with 80-lb. track, while it is planned that the first 126 miles of 80-lb. track out of Mombasa should be replaced with track of the order of 96 lb.; the 80-lb. rail released from this section would then be laid between Eldoret and Tororo, making possible the use of heavier locomotives over the greater part of the Kenya/Uganda main line. On the Tanganyika Central Line, bridges are to be strengthened to enable heavier types of locomotives to be used, while the track between Dar es Salaam and Morogoro is to be reballasted and certain realignments carried out. On the Central Line, authority has been given to converting locomotives to burn oil fuel which should result in increased operating efficiency and savings. A new train control system is being introduced between Dar es Salaam and Dodoma.

It has been decided that local circumstances are not favourable to diesel or electric main-line traction, bearing in mind the high capital cost of other forms of motive power and maintenance difficulties arising from the low standard of skill of the majority of maintenance staff.

The survey of a proposed westward extension from Kampala to connect with the lakes system of Lakes George and Edward made good progress during the year. Approval was given to construction of the first pair of the extension to Mityana (45 miles) and work was in hand during the latter part of the year. Work on the north-south rail link engineering survey of a proposed route to connect the E.A.R. & H. with the Rhodesian Railways, with a probable connection westward from the Southern Province Railway, was pushed forward energetically during the year. By December, about 1,350 miles of field survey had been completed. In the Southern Province of Tanganyika, good progress was made on the deep-water berth works at Mtwara. Work on the construction of the link beween Mtwara and Ruo Junction continued, and the extension from Nachingwea towards Lumesule Juu was also put in hand. Construction of three deep-water berths at Dar es Salaam, with transit shed and ancillary facilities began in the middle of the year. Extensive housing schemes were in hand throughout the three territories, additional stations were opened, crossing loops were lengthened, water supplies improved, and the total capital

expenditure on new railway and harbour works, branch lines, realignments, rolling stock and so on, during the year amounted to £3·4 million. The turnover in railway stores was £14,101,689, an increase of 17 per cent. over the previous year. The policy of manufacturing coaching vehicle bodies in Nairobi Workshops was actively continued. Except for a few old shunting engines, conversion of all locomotives on the Kenya/Uganda Section to oil fuel burning was completed.

The Scottish Region

(By a North Eastern Correspondent)

WHEN the State took over the railways in 1948, the lines in Scotland were grouped together, just as the first Minister of Transport proposed they should be in June, 1920, though under his scheme they would have been owned and managed by a private and independent company. The Scottish Region of British Railways, as we have called the former L.M.S. and L.N.E.R. areas north of the Border for nearly five years, comprise 3,509 miles of road laid to a large extent in hilly country where stiff gradients and sharp curves abound. No less than 1,951 miles, or 55·5 per cent., of the road is single line. At the end of 1951 the number of stations in the Region was 1,398 and traffic was marshalled in 152 yards, four of them worked on the "hump" or gravity system. In that year the Region produced over 12 per cent. of the total freight traffic originating on British Railways, including 35 per cent. of the total livestock traffic. Like the North Eastern Region, Scotland is not a rich source of passenger traffic, originating only 6·4 per cent. of all the passenger journeys on British Railways last year.

The Scottish Region has other points in common with the North Eastern. The activities of both are linked closely with heavy industries—coal mining, iron and steelmaking, shipbuilding, engineering, and chemical manufacturing. Coal and coke constitute 57 per cent. of the Scottish tonnage and nearly 70 per cent. of the North Eastern. Both Regions stand to benefit from a revival of our coal exports. They are equally interested in the development of agriculture and the fishing industry, with two of its main centres at Aberdeen and Hull. Each Region serves a district noted for the production of woollen cloth, but perhaps there is more diversity of manufactures across the Border, with jute at Dundee, linoleum at Kirkcaldy, papermaking at Penicuik, thread at Paisley, and distilleries everywhere from Glenlivet to Campbeltown. Last year merchandise accounted for more than a fifth of the Scottish tonnage and 13 per cent. of the North Eastern traffic. Minerals represented about 20 per cent. of the Scottish total and 17 per cent. of the North Eastern forwardings.

The Scottish Region is not too large to be controlled effectively from headquarters at Glasgow. The North Eastern is a more compact area having its principal offices at York, within easy reach of all the railway centres of much consequence within its boundaries. In one other important matter the two Regions are alike. Both possess a staff of hardworking and dependable railwaymen, accustomed to cope with the exceptional difficulties which on occasion attend traffic movements in the country north of the Humber. The experience of railroading in all weathers, accumulated over three or four generations, is a valuable asset. In fairness, it can be added that over the last 50 years the North Eastern managing and clerical staff has developed an aptitude for using traffic statistics.

The union of the Scottish railways gave an opportunity for rounding off the economies which accrued from the 1923 amalgamation and the 1932 pooling of receipts from competitive traffic. A number of posts became redundant, duplicate facilities were abolished, and through working was introduced whenever practicable. The resultant savings have been substantial enough to be mentioned in public on several occasions to illustrate the advantages of nationalisation. More than one account, too, has been published of new operating arrangements which are claimed to give the public improved services. So far from being grateful for these changes, the Scottish people seem to be using their railways less as time goes on. The principal traffic statistics have therefore been analysed to see what light they throw on the railway position beyond the Cheviots.

The table below compares the originating tonnage in 1951 with 1948 and in the first 24 weeks of 1952 with the same period of 1951:—

SCOTTISH REGION

Tons originating (000) :—	1948	1951	Decrease per cent.	24 weeks, 1952	Dec. or inc. per cent. from 1951
Merchandise	7,885	7,400	6	3,266	− 7·8
Minerals	8,039	7,308	9	3,429	+ 5·3
Coal & coke	20,920	20,150	3	9,271	− 3·1
Total ... ... (including livestock)	37,187	35,189	5	16,081	− 2·4

The decrease of 5 per cent. in tonnage makes all the difference between a brisk railway business and a lean one, especially when the loss of high-rated merchandise is large. The 1952 figures give no sign that the leakage of valuable traffic to road or water has been stopped.

The statistical comparisons which follow are between 1951 and 1948. Loaded wagons were 7·5 per cent. fewer. The average wagon load at starting point was 4 per cent. heavier, but the train load dropped by 5 tons to 113 tons. Net ton-miles were down 4·9 per cent., and freight train-miles were reduced by 0·6 per cent., while freight train-hours were lowered by 183,000, or over 8 per cent. Coaching train-miles were cut ruthlessly by 1,465,000 (6 per cent.) and coaching train-hours were 208,000 less (4½ per cent.).

With the lighter occupation of its lines, the Scottish Region increased freight train speed from 9·60 m.p.h. to 10·40 m.p.h., the highest average for any Region last year. In 1952, the North Eastern has topped the list throughout, registering 11·38 m.p.h. in June, compared with 10·66 m.p.h. for the Scottish Region. Coaching train speed has not been so fast in Scotland as in the North Eastern Region, where it has been above 15 m.p.h. since 1949. Because of its small train load, the Scottish average "net ton miles per train-hour" always lags behind the North Eastern result. In 1948, the comparative averages were 958 and 1,143; in 1951, they were 979 and 1,399 and the gap between the two results is widening this year. In much the same way, the Scottish Region always produced fewer wagon-miles in a train-hour than the North Eastern and is falling further behind this year. The Scottish average of 219 in 1951 was one below 1948, whereas the North Eastern raised "wagon-miles per train-hour" by 7 to 266 and may make a fresh record in 1952.

In considering these results it is well to remember that, before the Railways Act, 1921, came into force, the North Eastern Railway was a wealthy company with ample reserves, so that it could spend large sums on new works and rolling stock. The London & North Eastern Railway succeeded to a splendid inheritance and kept the property in an efficient state. As line capacity was increased during the war years, the North Eastern Region has ample elbow room. Of its 2,299 miles of road, only 613 miles, or 26·6 per cent., is single line and it has long stretches of track suitable for fast running. Traffic is concentrated at 979 stations, and 21 out of 95 marshalling yards are shunted by means of "humps" or gravity. Twenty-ton wagons have been used for nearly 50 years. An average wagon load at starting point of 10½ tons, the highest in any Region, is more than 2 tons above the Scottish load. By making the most of these operating advantages, the North Eastern Region has moved traffic expeditiously during the first six or seven months of the present year. In that same period, the Scottish Region has been in danger of losing a little of the mobility which was gained after freight train working was reorganised. It is to be hoped that any slight falling off will be rectified before long. Obviously much will depend on the nature and volume of the traffic offering and on the vagaries of the autumn and winter climate in Scotland.

E

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Statistics Run Wild

October 5

SIR,—It appears to me that the census forms are still insufficiently comprehensive. The statistics should surely indicate whether the passengers are fat or thin, for without these particulars there can be no accurate survey of seat occupation. As it would entail very little extra work by the census-takers, the statistics might also state the number of smokers and non-smokers.

The Transport Commission should also inform itself on the number of passengers who are accompanied by dogs, cats, and caged birds. It would, of course, be necessary to indicate the breed of the dogs as the Transport Commission would, very properly, want to be able to distinguish between bloodhounds and pekineses. Has rack occupation been overlooked or has provision been made on the forms for an indication of passengers carrying prize marrows, poultry, typewriters, harps, etc.?

One can well appreciate the keenness and indeed enthusiasm with which the railway staffs are looking forward to taking the census, and I deplore the attitude of one guard of my acquaintance who told me what he would like to do with the forms.

Yours faithfully,

GILBERT DALTON

18, Milverton Terrace, Leamington Spa

Paddington to the North-West

September 8

SIR,—In your issue of September 5 you have commented on the poor timing of trains between Paddington and Birmingham Snow Hill as compared with 1939. It might be added that there is a further worsening of facilities for stations north of Wolverhampton, for these are denied through service by the relatively fast 9 a.m. and 5.10 p.m. Pre-war the fastest trains were the 9.10 a.m. and the 6.10 p.m., which gave an arrival at Wrexham at 1.8 p.m. and 10.16 p.m. compared with 50 mins. and 52 mins. later respectively today. Apart from slower point-to-point timing and longer waits at stations than pre-war, it is particularly unfortunate that it should be the through trains to the North which are singled out for the new Bicester stops.

It is interesting to notice that there is a similar worsening on the ex-G.C. route from Marylebone to Sheffield. The former 8.45 a.m. no longer runs at all and the 10 a.m. and 6.15 p.m. (formerly 6.20 p.m.) arrive at Sheffield 50 and 38 minutes later. I have wondered whether some relief could not be given to both ex-G.W. and ex-G.C. routes by new trains from Marylebone to Rugby or Leicester at about 8.45 a.m. and 5.45 p.m. running *via* High Wycombe, Bicester, and Banbury. If the 9.10 ex-Paddington were relieved of the necessity to stop at Bicester and Banbury, it might prove unnecessary to continue to run two trains at 9 and 9.10. For the G.C. line new connections from Banbury would be valuable, and the new service to Woodford, and Rugby would be a partial restoration of pre-war facilities.

As a long-term policy the basing of the Marylebone main-line services on Paddington (so reducing the number of London's scattered termini and concentrating facilities as well as stock and locomotives) would seem desirable, but the present congestion at Paddington, especially between 5 and 7 p.m., would seem to preclude that for the present. Down business trains (semi-fast) for Slough at present leave Paddington at the awkward intervals of 4.30, 5.20, 5.40, 6.20 and 7.2 p.m. The 5.10 and 6.10 p.m. for Birmingham are part of the cause of the uneven spacing. Also, if the 5.10 p.m. fails to get a clear passage across at Old Oak Common Junction (as frequently happens), it immediately delays the 5.14, 5.17 and 5.20. If the 5.20 is more than a few minutes late at Slough, where it stops at the down main platform, it will also delay the 5.30 to the West of England. Some fairly extensive "development works" appear to be called for, but a measure of relief might be obtained if (1) either the down overbridge road were made available for Birmingham passenger trains (it does not carry a heavy traffic), or a loop were provided out of the north side of the down main at Old Oak to enable Birmingham trains waiting to cross over to pull clear of following traffic; and (2) a platform loop were provided for the down main at Slough.

Yours faithfully,

R. G. R. CALVERT

10, Bolton Avenue, Windsor

[The stops at Bicester to which our correspondent refers have been necessitated by new traffic to and from services depots in this vicinity. The 9.10 a.m. from Paddington gives a connection at Banbury out of the 8.10 a.m., and if it ceased to call there the present facilities could only be provided by running additional and unjustified mileage, at the same time lengthening the journey to Banbury from London for passengers who at present use the 9.10. The 9 a.m. and 5.10 p.m. are designed specifically to give a fast business service from London to Birmingham. The exit from the down overbridge line is on the north of Old Oak Common, and a connection into the down relief line would seriously impair facilities in Old Oak Common carriage sidings and freight marshalling yards.—ED., *R.G.*]

Annual Report on Railway Accidents

September 30

SIR,—Press reports on the Chief Inspecting Officer's report on the safety record of British Railways in 1951 have been instructive. Despite the fact that the report itself characterises the results as "disappointing," the Press has tended to play down the unsatisfactory aspects of the report while concentrating on the more credit-worthy.

There is little doubt that, taken as a whole, British Railways are coping with appalling difficulties not only courageously but with increasing measure of success, and they are in the fullest degree entitled to the sympathy and comprehension of the public. At the same time, certain sections of railway workers are notoriously not pulling their weight, and it would be a mistake to play down the fact that over 40 per cent. of the accidents were attributable to want of care, and worse, on the part of the operating staff. This is a highly discreditable result and cannot be glossed over by statements that "the true perspective was that only one passenger was killed in every 38 million passenger journeys." It is no service to those railwaymen—and they are still the majority—who are continuing to give loyal and devoted service, to gloss over the deplorable shortcomings of the very large numbers who are not.

Yours faithfully,

HENRY MAXWELL

164, Ashley Gardens, London, S.W.1

Training for Transport

September 23

SIR,—Mr. Frank Gilbert's article in the August number of the *British Transport Review*, to which you referred editorially in your October 3 issue, is evidence of the importance that has been, and is, attached to this subject. Yet there is no doubt that existing methods are causing much discontent amongst those junior in grade, but middle aged, members of the staff who are eager for promotion and for the additional responsibility such promotion entails.

To illustrate my point I quote my own case. Many others of my acquaintance could state a better one. Prior to the recent war I had the opportunity and benefit of training and experience in both the passenger and goods departments of large and small stations. Subsequently I

was appointed to the relief staff and relieved both stationmaster and combined stationmaster/goods agents positions.

In 1943 I was loaned to the Gold Coast Railway and worked in that Administration as Traffic Inspector, Grade 1, and as Administrative Assistant to the General Manager. On my return to the L.M.S.R. in accordance with my agreement I returned to my old position, was later appointed to a post in a district operating superintendent's office, and am now senior clerk of the General Section of that office.

One would imagine that the "Traffic Apprentice" and "Advertising of Vacancies" schemes would be designed to afford opportunities of promotion to persons with my background and experience but such is not the case. In the "Traffic Apprentice" scheme it is a case of "too old at 40" and in the "Advertising of Vacancies" scheme, the emphasis on seniority militates individual selection. The chance of a man aged 40, now in Class 2, obtaining by virtue of seniority an administrative position before retirement must be extremely remote, particularly when it is borne in mind that traffic apprentices on appointment are placed in Class 1 positions thus reducing the numbers of such vacancies advertised.

Admittedly opportunities must be given to suitable junior staff to enable them to qualify for the higher graded posts, and also provision must be made for the entry, at a suitable level, of recruits from the Universities, etc., but surely in any such schemes provision should equally be made for the further promotion of experienced and more senior members of the staff.

Yours faithfully,
E. J. MURPHY

221, Devonshire Road, Forest Hill, S.E.23

Railway Workshops—Asset or Liability?

September 5

SIR,—It is interesting to debate whether the railway workshops of this country are an asset or a liability. We are told that railway shops can build more cheaply than the trade and extremely low prices have recently been quoted in support of this contention. The basis of such prices will rarely bear close examination, however. For example, in one recent instance it was found that no allowance had been made for raw material as scrap was being recast! Again no allowance is made in quoted prices for the maintenance of large works and staffs in times of depression or material shortage as at present, this cost presumably being borne indirectly against maintenance.

A fundamental disadvantage of railway shops is that, not being subject to competition, there is no incentive to break away from existing types of motive power or adopt improved forms of construction on existing designs (*e.g.* retention of plate frames on B.R. steam locomotives for workshops reasons). This may help to explain why steam traction is still favoured in this island in spite of the overwhelming advantages to be gained by the use of newer forms of motive power as has been proved in every other country.

Under the present organisation, British Railways designers appear to have lost sight of their primary function, which is to develop improved vehicles and equipment at a rate not less than that of their competitors, the use of which will result in operating economies or additional traffic. Instead of so doing they appear to concentrate their energies on making minor alterations for workshop purposes to 40-year-old basic designs.

In view of the progress made in road and air transport in the last seven years it is small wonder that British Railways continue to decline.

I therefore suggest the following organisation as being more suited to the needs of today:—

(*a*). One officer only to be responsible for the design, maintenance, and running of all rolling stock, *i.e.* the present divisions of Mechanical & Electrical Engineer, Carriage & Wagon Engineer, and Motive Power Superintendent to be eliminated.

(*b*). A minimum number of railway works to be retained under direct management for maintenance only.

(*c*). The remainder to be placed under a separate organisation together with the bus building subsidiaries of the B.T.C.

(*d*). General specifications to be prepared by the railway administration for open tender (detailing to be carried out by contractor).

(*e*). A fixed proportion of orders to be allocated to former railway works for a period of grace of 5 years, after which allocation to be on a lowest tender basis.

By such means it is thought that all parties would benefit, the Operating Department being free to choose the most suitable equipment for its needs (also to determine the true cost of maintenance), the trade having the opportunity to compete for a stable home market, and the former railway works the incentive to modernise their equipment and methods.

Yours faithfully,
NOEL DUDLEY

48, Mount Road, Hayes, Middlesex

British 4-6-4 Locomotive Performance

October 3

SIR,—In the numerous observations penned these days on British locomotive performance, little is heard, amid frequent descriptions of runs by Gresley, Thompson, and Peppercorn Pacifics on the East Coast main line, of the behaviour of the class "W1" 4-6-4 locomotive No. 60700 which the former L.N.E.R. rebuilt in 1937 as a three-cylinder simple from the compound form with water-tube boiler in which it had run as L.N.E.R. No. 10000 from its first appearance in 1929. At the time of its conversion doubts were expressed in some quarters whether this powerful and unique 4-6-4 with its 41,435 lb. tractive effort would hold its own among the "A3" and "A4" Pacifics; two recent runs behind No. 60700 illustrate that it is still a powerful and lively motive power unit.

Both these runs are recorded on the heavy 2 p.m. down "Heart of Midlothian" express from London to Edinburgh which is worked by Kings Cross locomotive depot on the first lap from Kings Cross to Peterborough North, 76¼ miles from London. On the first run, in August this year, with a heavily loaded train, No. 60700 ran to Peterborough in 79 minutes, having actually taken 76 minutes to a signal stop on the bridge immediately south of Peterborough North Station—76 miles in exactly 76 minutes. On the second occasion, on the last Tuesday in September, the 2 p.m. train left Kings Cross five minutes late (owing to the late arrival of the empty stock), but No. 60700 reached Peterborough North two minutes early, in eighty minutes from Kings Cross and after running from milepost 20 to Peterborough North Station in 50 minutes at an average for the 56¼ miles of 67½ m.p.h.

Yours faithfully,
R. A. SAVILL

89, Wetherby Road, Acomb, York

CORONATION SEATS FOR OVERSEAS VISITORS.—A special department of the British Travel & Holidays Association is to be set up to deal with the allocation of a small number of seats in Government stands to travel agencies for sale to overseas visitors wishing to see the Coronation Procession. There will, of course, be a large number of seats from non-Government sources also obtainable through agencies. The special department of the association which is to be known as the Coronation Seats Department, will have its offices at 10, Mayfair Place, London, W.1. Seats will range in price from 10 guineas to 30 guineas; the closing date for applications is November 10 this year. Travel agents have been advised that seats allocated through the Coronation Seats Department are intended specifically for visitors from overseas and that applications for residents in Britain cannot be considered.

THE SCRAP HEAP

Restaurant by Rail

A vast quantity of cutlery, crockery, and catering equipment was transported 177 miles by rail for J. Lyons & Company to serve 1,200 guests at the inaugural luncheon at the opening of a new steel works in South Wales on October 7. Eighteen rail containers transported many tons of equipment including 1,400 chairs, 9,600 plates of various sizes, 15,000 pieces of cutlery, 7,200 glasses, 1,340 coffee cups and saucers, and countless other items of linen and plant. Lyons' staff, including 230 "Nippies," travelled in specially-chartered overnight trains to prepare the luncheon and convert an empty tinplate warehouse into a restaurant.

Newport Stations

In sending the photograph reproduced below, a correspondent, Mr. W. J. Skillern, points out that although Newport has only one passenger station, tickets issued there bear the legend "Newport High Street"—a reminder that at one time there were other stations. The illustration is of one of those stations, Dock Street, and was taken on August 4, 1952, the centenary of its opening. This station, together with Mill Street, has been used as a goods station since 1880.

The view shows what remains of the "train shed." The adjoining building on the left is now used as a wood-store. This building has some pretensions to architectural elegance, having mouldings and cornices; it would appear to be the entrance hall or waiting room. The name "Abertillery" is still visible on one wall. Other bays of this wall have "Blaina & Nantyglo," "Tredegar & Sirhowy," and "Victoria & Ebbw Vale" lettered on them, evidently marking places where luggage was stacked. A small door in the centre has a fine small brass plate reading "1st Class Entrance," but one searches in vain, our correspondent concludes, for some door, pillar or other relic with the name or initials of the Monmouthshire Railway & Canal Company.

Country Journey

Country stations would flit by in the summer afternoon, many of them announced by the inarticulate cries which are still characteristic of them. These were readily understood and accurately imitated by the children. Wild flowers, especially harebells, would wave on the embankments in the breeze of the passing train. There was often a change at the junction, where a railway employee was heard to say to a colleague, in a truncated snatch of conversation, "What can you expect with four and a half on?"—a remark which puzzled a grandparent to distraction, and equally puzzled succeeding generations until it became a family saying.—*Alison Bayley in "The Manchester Guardian."*

"Orient Express"

For those of us who were born in the first decade of the twentieth century—for the generation, that is to say, who never waver in their conviction that the greatest American soldier of all time was General Custer—nothing can ever replace the railway train. . . . The "Orient Express" meets all our Edwardian requirements. There is no attempt on the part of the French railway authorities at streamlined modernity. The *wagons-lits* and restaurant car look precisely the same as they must have done in the days of William Le Queux. We have little doubt, as we climb on board at the Gare de Lyon, that our fellow travellers will mainly consist of Queen's Messengers and international spies. It is only to be expected that one or two of them will mysteriously disappear as soon as we reach the Balkans. But who cares? We ourselves shall, of course, behave with traditional insular phlegm, provided that the promise of solid comfort continues to be fulfilled.—*Dingle Foot in "The Observer."*

Counting the Spoons

A few weeks ago, writes a correspondent, whilst awaiting service at a certain table in the Marylebone Station Dining Rooms of the Hotels Executive, curiosity prompted an examination of the cutlery set for six persons. The reward for such inquisitiveness showed there were no less than ten different sets of monograms and inscriptions, giving in themselves much food for thought, for they were:—

L.N.E.R. Refr. Dept., King's Cross.
L.N.E.R. (*In script*).
Dining Car—G.N. & N.E.
J.L. & Co., Ltd. (*Tell it not in Gath*).
L.N.E.R. (*In block*).
Gt. Central Rly., Leicester.
E.C.J.S.D.C.
L.N.E.R. (Dewsbury).
G.N.R. (D.C.).
B.R. (E) (*Last but not least*).

This indeed represented a pooling of resources so far as the Hotels Executive were concerned, but what interesting reading would be forthcoming if the circumstances behind the issue of each set of cutlery could be ascertained. Why, for instance, did the former L.N.E.R. decide to have its inscription in block type at some time and then change to "script"; or, of course, the order may have been reversed.

Then again, how old is the fork from the old "E.C.J.S.D.C." likely to be?

Those implements bearing the name of a town—were they at one time regarded as "non common user"?

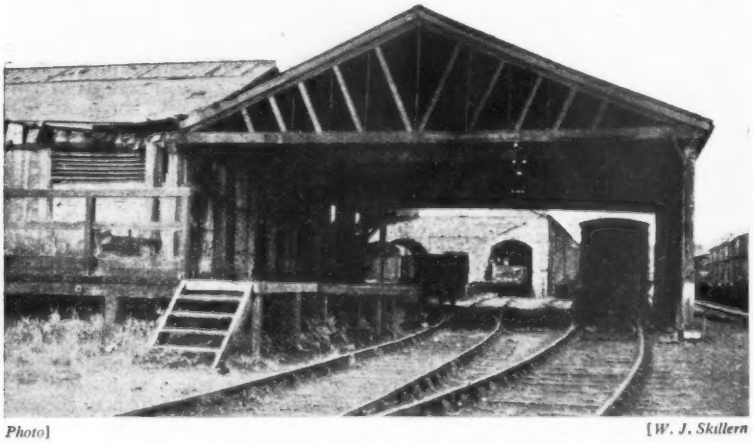
Travel Topic

Listen, all travellers intent
On visiting the Continent!
The "Golden Arrow" link with France,
Epitome of elegance.
Pullmans, Trianon Bar, and all,
No longer is matutinal.
Hard headed harbingers of trade,
With diplomats of every grade
And devotees of sun and fun,
Must leave Victoria at one.

Tradition thus succumbs once more,
The permanence of heretofore
Gives place to speculative change.
Iconoclasm's rampant range,
So symptomatic of today,
Disturbes the tenor of our way.

Rumours begin to circulate,
That, down by Platform No. 8,
Strange sounds from regions transcendental
Bewail the "Morning Continental,"
While graveyard tremors indicate
Where restless residents rotate.
Doubtless the Calais *cheminots*
Will perpetrate a few *bons mots*,
But Dover's quiet on the whole,
There's not a murmur from a Sole!

SCORPIO



Photo] [W. J. Skillern

Dock Street Station, Newport, Mon., originally used by Monmouthshire Railway passenger trains, and now a goods station

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Centralised Train Control

Centralised train control was inaugurated between Shangani and Somabula (23 miles) on September 17. Seventy-four miles of the Bulawayo-Gwelo line are now thus equipped, and the installation is being extended to Gwelo, 21 miles. At the other end of the section, C.T.C. begins at Heany Junction, 17 miles from Bulawayo, and will be extended to Bulawayo when the new line from Heany to Bulawayo *via* the northern outskirts of the city is completed.

PAKISTAN

New N.W.R. Diesel-Hauled Expresses

A new fast service is being introduced between Rawalpindi, Lahore, and Karachi, on the North Western Railway. It will be made up of all-steel stock built in France and hauled by Alco diesel-electric locomotives. The new service will be additional to the existing "Pakistan Mail" and "Pakistan Express" between Peshawar, Lahore, and Karachi.

CHINA

Chengtu-Chungking Railway

The Chengtu-Chungking railway, opened to traffic on July 1 this year, is reported to be showing results. Commodity trading between the cities and the countryside of Szechuan Province and between that province and the rest of China is being speeded up. The railway is built parallel to the old highway linking the provincial capital, Chengtu, with Chungking, and is gradually superseding the highway in conveying through traffic.

IRAQ

Air-Conditioned Coaching Stock

Two new metre-gauge air-conditioned first and second class convertible sleeping-cars have been delivered; they were built by Cravens Railway Carriage & Wagon Co. Ltd. The cars each have four single-berth first class compartments, in communicating pairs, with fitted hand-basins, and three four-berth second class compartments and one two-berth coupé. A toilet and attendant's compartment are at the first class end of the coaches and two toilets at the second class end. These vehicles will join the existing two air-conditioned coaches on the Baghdad-Basra Mail run, so permitting an air-conditioned service to be given nightly each way instead of only five times weekly as at present.

A further five upper-class air-conditioned coaches, including a restaurant car, are expected within the next few months from the same makers, and will enable air-conditioning to be extended to the Baghdad-Kirkuk-Erbil sleeping-car trains.

Air-conditioned stock already operates nightly on the Baghdad-Mosul standard-gauge service.

UNITED STATES

Another Main Line All-Diesel

On July 16 the last two steam locomotives in service on the West Shore line of the New York Central System, River Division, made their final runs, and from July 17 this line became all-diesel. It is 142 miles in length, connecting New York with Albany along the west bank of the Hudson River—the main New York-Chicago line runs on the east bank—with branches from Kingston to Montgomery and Oneonta. Before the changeover began, 75 steam locomotives were required to operate the traffic, which has now been turned over to 57 diesels.

C.N.W.R. Steam Generator Car

The Chicago & North Western Railway recently converted a twelve-wheel steam locomotive tender into a mobile steam plant designated Steam Generator Car No. 150. It is intended for (*a*) providing steam for pile-drivers and for propelling their rigs from one job to another; (*b*) heating passenger trains hauled by freight diesels or supplementing the heating units of passenger diesels hauling 18-car trains; (*c*) heating and cooling special trains standing in outlying sidings; (*d*) supplying breakdown cranes; and (*e*) temporarily replacing outstation boilers under repair.

The car contains a flash-type steam generator, a diesel-electric generator, and an air-compressor. It provides sufficient steam for a large double-acting pile-driving hammer, and will produce a 200 lb. per sq. in. pressure of steam from cold water in 2 min. Automatic control is provided, so that steam is produced only when, and in the amounts, required. Moreover, 11,000 gal. of water and 2,160 gal. of diesel fuel-oil are carried, enabling pile-driving to be carried on for ten days without replenishment. This mobile generator has already proved so useful that a second similar one is to be placed in service.

FRANCE

Rail-Road Co-ordination

The Minister of Public Works & Transport has enacted a decree setting out standard operating rules for regular road passenger services. Of particular interest to the S.N.C.F. is the section of the decree dealing with co-operation between road transport undertakings and the railway.

It is stated that the operator of road passenger services must keep the S.N.C.F. advised of all details, including bus timings, likely to assist in the development of road-rail co-ordination. In addition, he should display in his offices

Main Line Electric Working in France

Photo] [*Yves Broncard*

Southbound "Mistral" at Couzon-au Mont d'Or, approaching Lyons, hauled by Co-Co locomotive No. 7101 built by Alsthom. This locomotive, placed in service in June, ran nearly 30,000 miles in August

information regarding railway services likely to be of interest to his passengers.

The Prefect of the Department, after consultation with the Departmental Technical Committee set up under the Road-Rail Co-ordination Decree of November 14, 1949, is empowered to ask the road transport undertaking, in collaboration with the S.N.C.F., to issue combined road-rail tickets, and to arrange for the through registration of passengers' baggage conveyed by joint road-rail services.

Holiday Traffic at Paris

Much of the summer holiday traffic out of the Paris termini coincides with the August 15 public holiday. During the five days August 12-16, 633,205 long-distance passengers departed from the Est, Nord, Montparnasse, Saint Lazare, Lyon, and Austerlitz stations, an increase of 84,000 over the corresponding period in 1951. More than 33 per cent. of these passengers reserved seats in advance. During the ten days from July 26 to August 4 last, more than 310,000 long-distance passengers departed from the Austerlitz Station alone.

LUXEMBOURG

Extension of "Europ" Wagon Pool

At a recent conference at Mondorf-les-Bains (Luxembourg) attended by twelve Western European railway administrations, including the French National and the German Federal, it was decided to establish a pool of some 160,000 wagons. The Franco-German ("Europ") pool (see our August 29 issue) of 100,000 wagons is to be extended, suitably modified, to all railways participating in the new arrangement, which is to be in force by January, 1953.

IRELAND

C.I.E. Consultative Committee

The first meeting of the C.I.E. Consultative Committee of trade union representatives met in Dublin on September 29, and details of drastic proposals to curtail private road transport were announced. The main details of these proposals as announced by C.I.E. are:—

1. All vehicles of more than two tons unladen weight, owned by firms operating their own transport, to be restricted to a radius of operation of 20 miles from the place of registration.

2. All Government contracts to contain a clause providing for any transport work which has to be done to be carried out by the public transport undertaking.

3. Contracts made by local authorities for work in which Government grants are involved to contain a similar clause.

4. Public companies such as the Electricity Supply Board, and companies enjoying a high tariff protection, to be under an obligation not to operate transport on their own account, but to have this done by C.I.E.

5. In the case of companies seeking trade loans or guarantees from the Government, a condition to be imposed that none of the capital advanced shall be used for the purchase of any transport equipment, and that any transport required by them shall be done on their behalf by the public transport undertaking.

The Committee consists of representatives of about 22,000 workers in 20 trade unions, and was formed on the proposal of the Minister for Industry & Commerce.

Reference also was made to the estimated loss of C.I.E. for the year ending March 31, 1953, some £2,400,000.

Acquisition of Great Northern Railway

When announcing in the Republic of Ireland House, on September 24, the floating of a new £20,000,000 loan, the Minister for Industry & Commerce said that part of the money to be raised would go towards the acquisition of the part of the Great Northern Railway in the Republic.

S.L.N.C. Fares Increases

The Sligo, Leitrim & Northern Counties Railway has been authorised to increase its maximum charges for carrying passengers and merchandise by about 5 per cent.

Publications Received

Principles and Practice of Pre-stressed Concrete. By P. W. Abeles. Vol. 1. Second Edition Revised. London: Crosby Lockwood & Son, Limited, 39, Thurloe Street, S.W.7. 10 in. × 7½ in. 116 pp. Illustrated. Price 21s. net. Dr. Abeles, the well-known authority on this subject, has confined this volume mainly to the pre-stressing of beams, but he begins with a lucid outline of the basic idea of pre-stressing and its application. Aided by the excellent diagrams with which the book is replete, the student and junior draftsman can thus grasp the elementary features of the subject, every phase of which is covered both theoretically and practically. The various pre-stressing methods are described and fairly discussed, and the research and practical application of both pre-and post-tensioning are dealt with exhaustively.

Under the heading, "Economy of Pre-stressing," special mention is made of the road overbridges built in connection with the Manchester-Sheffield-Wath electrification. Attention is also called to the remarkable resilience of pre-stressed concrete sleepers after 2½ years in the track, as shown by a diagram and description of tests made on the former L.N.E.R., and the general behaviour of pre-stressed structures is fully discussed.

Dr. Abeles urges standardisation of notation and design, and explains his system of notation, used satisfactorily on British Railways. Like the diagrams, the many photographic illustrations are excellent. This comprehensive work concludes by stating six advantages of pre-stressed over reinforced concrete, namely, absence of cracks, greater flexibility and resilence, reduction in sectional and consequently constructional depth, greater economy, saving in steel, and the possibility of easier execution of works.

Bakelite Progress.—Included in the current issue of *Bakelite Progress*, published by Bakelite Limited, is the use of Bakelite moulded materials for fan and electric light switches and the Egaspray all-electric airless spray gun manufactured by Ega Developments Limited. The gun is suitable for the majority of liquids from oil to paint, and is constructed principally of three separate mouldings, while a British Thomson-Houston motor provides the motive power. The publication also includes illustrations showing the manufacture of blockboard and veneers with Bakelite adhesives and examples of Warerite and Vybak plastics.

Diesel Engine Starting Batteries.—The special form of battery construction necessary to provide for the heavy discharge rates involved in starting the engines of diesel locomotives is described in a new illustrated booklet from the D.P. Battery Co. Ltd. To show the world-wide application of the Kathanode batteries, illustrations are reproduced of locomotives equipped with them operating in Great Britain, Australia, New Zealand, Tasmania, Ireland, Egypt, Malaya, and Ceylon. Cells are listed with capacities up to 494 amp. hr. at the 5-hr. rate, and able to give an initial current as high as 2,360A. By virtue of their design, Kathanode batteries need have only 50 per cent. of the capacity of the ordinary traction type batteries once used for diesel engine starting.

Office Efficiency Products.—A complete range of business products and their applications is dealt with in a new illustrated booklet, "The Easier Way to Office Efficiency, issued by Remington Rand Limited. The economy of every firm is affected by its standard of administration, and the need to simplify administrative work has never been more important than at present. This booklet explains to executives the many ways in which the company can assist them in making business management pay for itself.

Stationary Air Compressors. — The Consolidated Pneumatic Tool Co. Ltd. has issued a fifth edition of their catalogue No. 49 containing a technical description of two-stage air cooled, and single-stage water cooled compressors, air receivers, and aftercoolers. The various types are illustrated, with specifications, installation dimensions, typical drives and so on. The principal features of air receivers and aftercoolers are given in tabular form.

Claims Prevention: A Universal Problem—1

Comparison of European and North American practices

(By a Correspondent)

IN nearly every country, even after due allowance for the effect of higher price levels, there was a serious rise in claims payments by the railways as a result of the second world war. Since 1948, however, there has been an improvement, though prewar standards are far from being reached yet. The greatest improvement was in 1948-50, but there was a general slight falling off in 1951.

The following table gives details for some postwar and prewar years for British Railways, the United States Class I railways, the French National Railways, and the South African Railways & Harbours:—

Railway	Year ended	Currency	Total freight claims payments	Claims payments as percentage of freight revenue
British Railways	December 31, 1951 ...	£	3,017,600	1·15
	,, ,, 1950 ...		2,572,589	1·12
	,, ,, 1948 ...		3,857,000	1·82
	,, ,, 1938 ...		516,800	0·53
Class I Railways of the United States	,, ,, 1951 ...	$	100,094,075	1·11
	,, ,, 1950 ...		88,956,700	1·08
	,, ,, 1948 ...		130,656,024	1·61
	,, ,, 1938 ...		20,662,927	0·69
French National Railways ... (S.N.C.F.)	,, ,, 1951 ...	thousand francs	1,527,000	0·62
	,, ,, 1950 ...		1,272,000	0·70
	,, ,, 1948 ...		2,812,000	1·57
	,, ,, 1938 ...		66,000	0·62
South African Railways & Harbours	March 31, 1951 ...	£ (S.A.)	353,105*	0·49
	,, ,, 1950 ...		416,245*	0·69
	,, ,, 1949 ...		649,818*	1·18
	,, ,, 1939 ...		59,972*	0·23

* Net loss after recovery of salvage.

A similar trend could be shown for other countries. It may be asked whether this world-wide trend is fortuitous or an active result of the railways becoming more conscious of claims prevention. To answer this, it is proposed to analyse the claims payment figures in France and U.S.A. and to compare prevention techniques, with reference to British Railways practice where comparable.

Analysis by Cause of Claim

The causes of claims can be divided into three categories: losses (including theft); damage; and delays. On British Railways in 1951, losses, theft, and pilferage accounted for approximately 56 per cent. of the total claims payments; this compares with a figure of 54 per cent. in 1950 and 72 per cent. in 1948. In U.S.A., in 1951, unlocated loss of entire packages and of other than entire packages (roughly equivalent to loss and pilferage in Europe) reached 9·8 per cent. of total claims payments; corresponding figures for 1950 and 1948 were 9·5 per cent. and 19 per cent. respectively. On the S.N.C.F. losses (including theft), which accounted for more than 37 per cent. of total claims payments in 1948, had been reduced to 27 per cent. in 1950 and 21 per cent. in 1951. In each case claims for damage accounted for most of the balance; delays were of minor incidence and responsible for 2 to 5 per cent. of claims payments.

In comparing the claims on the British, French, and U.S.A. railways, the most noteworthy difference is the much greater incidence of loss and theft in Great Britain, particularly at present. In comparison with U.S.A., the ratio of total claims payments to freight revenue on the British Railways does not differ greatly, but the S.N.C.F. shows a decidedly more favourable ratio. Too much emphasis should not be given to minor differences in this ratio as it is hard to ensure the same basis in each case. There is, for example, no standard definition of freight revenue, and only a most detailed analysis of accounts could make certain that only comparable items are included. The comparison between the S.N.C.F. ratios in 1948 and 1951 is revealing, in view of the high postwar rate of inflation in France which has tended to send up the price level, on which claims payments are based, to a relatively much higher level than freight rates.

Prevention Organisation

Claims prevention on the S.N.C.F. is organised on an all-line basis with a co-ordinating officer at system headquarters. There are claims officers at the Regional and District levels with travelling claims prevention inspectors who visit trouble spots and maintain touch with traders and local railway staff. At some of the larger stations are employed claims prevention foremen.

In U.S.A., each railway has its own claims prevention organisation, but there also has been, for many years, a Freight Claim Division of the Association of American Railroads (before 1934, the American Railway Association). This was inaugurated in 1920, but before that there was a Freight Claim Association formed in 1892; towards the end of 1951 a further step was taken with the creation of a new Freight Loss & Damage Prevention Section of the A.A.R. with a full-time director at its head. The Freight Claim Division continues as an integral part of the new section, but now confines its activities to claim accounting and settlement work, its other functions being reallocated by the Freight Loss & Damage Prevention Section. These include controlling the activities of a number of travelling investigators, circulating among railways material by traders and package manufacturers designed to increase the effectiveness of claims prevention, and maintaining links with eight regional freight claim conferences composed of the officers responsible for claims on individual railways. These deal with local problems through a Loss & Damage Prevention Committee; matters of more widespread importance are referred to a National Freight Loss & Damage Prevention Committee, of which the director of the A.A.R. new Freight Loss & Damage Prevention Section will now be chairman.

On British Railways there are claim prevention personnel at Regional and District headquarters and travelling claim prevention inspectors responsible for studying difficulties on the spot and for the application of local remedies where this is possible. Inter-Regional and other committees maintain contact between different areas. Claims prevention foremen are employed at some goods sheds, with the specific task of supervising the handling and stowing of freight.

Claims for Damage

Claims for damage arise fundamentally from: (*a*) improper packing; (*b*) careless or rough handling and improper stowing in wagons; (*c*) vibration and shock while in transit; or (*d*) defective rolling stock. There is little doubt that unsatisfactory packing by traders is responsible for a large number of claims for damage, and it is the aim of every railway to induce traders to pack goods adequately.

The S.N.C.F. is not compelled to accept for transit goods which are not packed, where it is the custom of the trade to pack such goods. In addition, it is not bound to accept goods which are inadequately packed. Where unpacked or improperly packed goods are accepted, the railway staff must obtain from the consignor a signed statement of condition so that the railway can disclaim responsibility in case of damage.

In conjunction with the Association of Cardboard & Carton Manufacturers and other packaging associations, the S.N.C.F. has sponsored, since the war, the inauguration of a General Laboratory for Packaging Experiments. The services of the laboratory are available, free of charge except for major studies, to all traders. The laboratory has taken the initiative in designing standard forms of package, and when a trader's packages are deemed to conform with the standards laid down the consignor is authorised, under certain safeguards, to attach to his goods, labels bearing a reference number and the words " Agréé S.N.C.F."; preferential rates are applied to such goods.

In U.S.A., the A.A.R. has maintained for many years a Freight Loading & Container Bureau, whose activities have now been transferred to the new Freight Loss & Damage Prevention Section. The bureau is responsible for investigating and promoting the best standard practices in packing, handling, and loading traffic. Its engineers, after consultation with traders and others interested, prepare illustrated pamphlets on methods of packing and loading. Amongst other devices designed by the Freight Loading & Container Bureau staff is the Conbur Incline Testing Device, used for testing the adequacy of packages despatched by rail, and to check methods of reinforcing, cushioning, and sealing them.

British Railways are represented by technical and claims officials at the meetings of the British Standards Institution, and on committees appointed by the Ministry of Agriculture & Fisheries and by the Department of Scientific & Industrial Research, which are organising packaging information for industry. The development of fibreboard packages led to the setting up of standards of fireboard packing for traffic by passenger and goods train which have been included and made statutory in the rates and charges for commodities carried at railway risk. In general, sub-standard packages are carried at owner's risk or under the conditions of carriage for " damageable goods not properly protected by packing."

Packing Requirements

The difference between the French and British practices as to packing requirements and responsibility is that in France, the railway almost automatically accepts responsibility, and any exception must be agreed individually with the consignor. In Britain, allowance is made in the conditions of carriage for certain types of goods to be accepted at owner's risk.

On the S.N.C.F., it is stated, rather fewer claims are arising as a result of loading and unloading traffic. The use of mechanical equipment at a number of large centres—a practice which it is proposed to extend as soon as capital restrictions are eased—and of containers has reduced damage.

U.S.A. railways have developed mechanical handling still further, but emphasise the importance of detailed instruction for their staff and the staff of traders responsible for loading wagons. From time to time arrangements are made for the loading foremen to observe the unloading at destination of wagons which they had previously loaded, while photographs, which are returned to the originating station, are taken of the condition of loads at destination. In 1948 was prepared an instructional film entitled " Easy Does It," on careful handling at termini, shown not only to railway staff audiences, but also at meetings of traders' groups. Devices have been developed to enable wagons to be

WHEN YOU SMACK 'EM
...YOU CRACK 'EM!
Couple Carefully!
BRAKE THE CAR BEFORE THE FREIGHT GETS BROKEN
Freight Claim Dep't...Union Pacific Railroad
O. I. WULLSTEIN, GENERAL FREIGHT CLAIM AGENT
OMAHA, NEBRASKA

Claims Prevention Poster issued by the Union Pacific Railroad

divided into compartments and loads to be divided up; of particular interest is the " Pullman Compartmentiser " wagon, equipped with two pairs of steel bulkhead gates suspended from the ceiling. These gates can be locked to divide the load into three compartments at any desired position inside the car. This type of wagon can also absorb impacts without damage to the merchandise Claims for goods carried in these wagons hardly exist.

In Britain, standard methods of loading are laid down for different types of traffic. As in U.S.A., collapsible bulkheads are used to divide up loads, and fitments in wagons enable goods to be secured firmly. One development carried further in Britain than elsewhere is containers, some specially fitted for particular traffic. As in U.S.A. photographs have been used to instruct staff in the proper methods of loading.

Most shocks are the result of rough shunting. Many railways use straw pads and old motor tyres as dunnage, but the S.N.C.F. has pioneered the use of shock-absorbing packings made from scrap brake rubber hose; the brake hose is cut into 2-ft. lengths and joined to form a rubber mattress. Nearly 150,000 are now in use. This device was described in some detail in our issue of February 29.

The S.N.C.F. has experimented with a shock-absorbing frame which can be fitted to an ordinary wagon. Traffic so loaded has withstood test collisions at speeds up to 11 m.p.h. It is also studying shock-absorbing wagons similar to those used by the British Railways for fragile goods.

Other measures adopted by the French railways include retarders in marshalling yards and the virtual elimination of fly shunting; impact recorders; and a bonus scheme for marshalling yard staff calculated on the basis of a combination of shunting efficiency (measured by the number of wagons handled divided by the number of shunting engine hours), staff efficiency (dividing the number of wagons forwarded by the actual hours on duty of appropriate staff), damage to rolling stock (roughly the number of loaded wagons forwarded divided by the number of wagons damaged in shunting), and regularity of working (dividing the aggregate lateness of all trains despatched by the number of trains leaving the yard). Penalties can also be applied for all irregularities which can be attributed specifically to any yard.

Impact Recorders

Special measures adopted by U.S.A. railways to minimise shocks in transit also include impact recorders, now becoming almost universal practice. The gravity of the problem is continually stressed to the staff, and it is the intention that the striking speed at the time of the impact should be restricted to 2 m.p.h. Continual attention is given to the buffing, draw, and brake gear on wagons. At one time, pocket speed cards were issued to yard staff to help them judge coupling speed more accurately.

One of the most outstanding developments in Great Britain in this field is the design of shock-absorbing wagons for fragile freight; over 3,000 are in use and they have resulted in appreciable reduction in damage.

(To be continued)

LISTER DIESEL ENGINES IN U.S.A.—R. A. Lister & Co. Ltd. has announced conclusion of an agreement for the sole distribution of the Lister range of diesel engines for the continent of the United States with the National Supply Company, whose Engine Division head office is in Springfield, Ohio, with branches in various parts of the country. These arrangements were made after a recent visit to the United States by Sir Percy Lister, Chairman of R. A. Lister & Co. Ltd., and a subsequent visit to England by Mr. F. Howard Kilberry, General Manager of the National Supply Company's Engine Division. The latter company will promote the sale of the Lister engines which are complementary to its own Superior and Atlas engines. The Lister-Blackstone American Company will continue to handle other Lister and Blackstone products. A close working association between the English and American companies, in regard to research, production, and distribution, is provided for in the agreement.

One-Man Control of Hump Shunting

Centralised operation of points and time-speed-controlled retarders at Air Line Yard in Milwaukee

A SYSTEM in which both route-setting of points and retarder operation are controlled by push-buttons from one panel is in use at the Air Line marshalling yard of the Chicago, Milwaukee, St. Paul & Pacific Railroad at Milwaukee, Wisconsin. This combination of route-selection with retarders that automatically regulate the speed of wagons to a chosen level is thought to be unique. Some details of the time-speed method of control used in the retarders were given in our August 15 issue. The automatic switching and retarder speed control apparatus was designed and supplied by the Union Switch & Signal Division of the Westinghouse Air Brake Company.

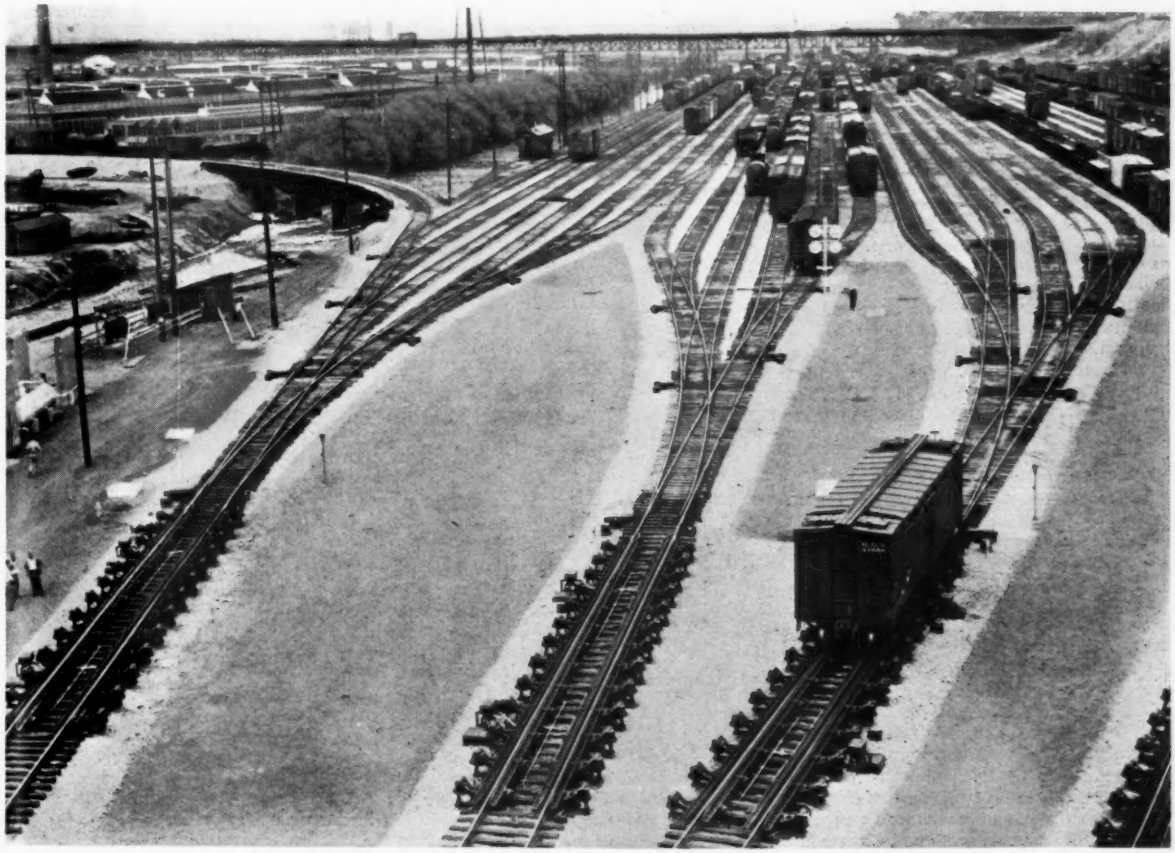
The marshalling yard comprises 24 sorting sidings with capacities of from 26 to 66 wagons, giving a total capacity of 1,095 wagons. Access to all sidings is controlled by an operator on the third floor of a control tower at the foot of the hump. He sits at a console on which appears a full diagram of the yard layout. Push-buttons for route-selection are grouped on the panel at his left hand, each marked with the number of the siding to which it controls the entry. Retarder controls are arranged on the track diagram in their correct relative positions. Also on the diagram are switch handles for individual operation of points when required.

The yard is equipped with a master retarder on the hump and four group retarders, one in the approach to each group of sidings. The Union Model 31 electro-pneumatic retarders use compressed air as the source of power to apply brake shoes on both sides of the wagon wheels. Air operation of brake shoes combines firmness and resilience with instant operation, fully independent of brake shoe wear and car-wheel widths. The shock-absorbing characteristics of the air in the cylinders cushion the effect of any unevenness of shoes or wheels so that shocks are not transmitted back to electrical equipment or through mechanical devices.

The retarders consist of a number of 6 ft. 3 in. units with individual power cylinders. Each retarder can be set by push-buttons on the control panel to hold a cut of wagons to a predetermined speed. Six different speeds are available for automatic control. Wagons leave the master retarder at from 5 to 15 m.p.h. and are controlled to leave the group retarders at 4 to 10 m.p.h., speed selection being made by the operator according to load and how easily they run.

A retarder is normally closed under pressure determined by speed selection and is operated automatically in response to speed measurements effected through track circuits and timing relays. Speed measurements start when the first wheels enter the retarder and continue until the last pair of wheels leaves the retarder.

When a cut enters the retarder at greater than selected speed, initial pressure is maintained to reduce speed. When the cut slows down sufficiently, the retarding pressure is reduced and regulated to obtain selected speed. If a cut is moving at a speed lower than selected, the retarder is released to permit acceleration. As soon as the speed increases sufficiently, retarding pressure



View of the Air Line Yard sidings from the control tower, showing group retarders in foreground and wagon repair road on left, access to which is also given from the controller's panel

Control panel combining route selection and retarder operation from push-buttons on diagram of the yard layout

is reapplied so that the selected speed is obtained.

Retarder controls on the panel consist of toggle switches and groups of six speed-selector push-buttons. The switches are set normally for automatic operation but can be used if desired for manual control, having three other positions giving heavy (full) and light (half) application or full release of the retarder.

The route-setting system of point operation enables five routes to be pre-set and stored. A panel in front of the operator displays the routes selected and in storage by means of illuminated digits.

The route set up at any moment is defined by indicator lamps on the diagram which light up in advance of each cut as it progresses. During manual operation of points either the "normal" or "reversed" lamp is illuminated continuously according to their setting. A third lamp adjacent to each points position on the diagram lights up to show when the associated detector section is occupied.

With this Union system insulation is simplified, so that yard space can be saved by using detector track circuits within the retarders, avoiding the need for extra lengths of track between points and retarders. Since these features permit leads and points to be grouped closer to the hump, sidings can be made longer in limited yard areas. Moreover, with sidings closer to the hump, the height of the hump may be minimised and wagon speeds can be controlled with fewer retarder units.

As well as improving service for the rapidly increasing volume of traffic at Milwaukee, an important objective of the scheme is to reduce damage and loss with the automatic speed control feature of the installation. The new equipment now operating enables the yard to handle 2,400 wagons in a 24-hr. day.

Some of the electro-pneumatic retarders which operate to control wagons to one of six speeds pre-selected in the control tower (on left)

British Railways Locomotive Tests—1

Performance and efficiency tests carried out with selected locomotives for determining economical train loadings in passenger and freight services

By E. C. Poultney, O.B.E., M.I.Loco.E.

THE first of a series of locomotive tests carried out by the Railway Executive, British Railways, during the latter part of last year form the subject matter of three bulletins, copies of which have recently been issued by the Mechanical & Electrical Engineer's Department (see *The Railway Gazette* of June 6).

The three locomotives used for these tests, which have been conducted by the Locomotive Testing Committee under the direction of Mr. R. A. Riddles, Member for Mechanical & Electrical Engineering, Railway Executive, are given in the following table:—

TYPES AND LEADING DIMENSIONS OF LOCOMOTIVES TESTED

Locomotive	"Hall" class 4-6-0 No. 7916	E. & N.E.R. "B1" class 4-6-0 No. 61353	L.M.R. class "4" 2-6-0 No. 43094
Cylinders, dia. and stroke	18½ in. × 30 in.	20 in. × 26 in.	17½ in. × 26 in.
Coupled wheels, dia.	6 ft.	6 ft. 2 in.	5 ft. 3 in.
Valves, dia.	10 in.	10 in.	10 in.
Valve gear	Stephenson	Walschaerts	Walschaerts
Tubes, number and outside dia.	145—2 in.	141—2 in.	160—1⅜ in.
Flues " " " "	21—5½ in.	24—5½ in.	24—5⅛ in.
Length between tubeplates	15 ft. 2⅞ in.	13 ft. 11⅛ in.	10 ft. 10½ in.
Heating surface:			
Tubes and flues	1,582·6 sq. ft.	1,493 sq. ft.	1,090 sq. ft.
Firebox	154·9 "	168 "	131 "
Total evaporative	1,737·5 "	1,661 "	1,221 "
Superheater	295 "	344 "	231 "
Total	2,032·5 "	2,005 "	1,452 "
Grate area	27·07 "	27·9 "	23 "
Boiler pressure, lb. per sq. in.	225	225	225
Rated tractive force, lb.	27,275	26,878	24,172
Total weight, engine and tender	123·1 tons	123·15 tons	99·4 tons
Coal capacity	6 "	7·5 "	4 "
Water "	4,000 gal.	4,200 gal.	3,500 gal.

In each instance the trials comprise performance and efficiency tests, with exhaust steam injector for the 4-6-0 type "Hall" and "B1" class locomotives, and with a live steam injector only in the case of the 2-6-0 type class "4" locomotive.

The test report bulletins contain a series of graphs illustrating certain inter-dependent relationships concerning performance and efficiency of the locomotive tested, supported by explanatory notes. The information thus given is that necessary to establish in respect to each of the engine classes.

(*a*) The cost in terms of coal and water of hauling different train loads at various speeds over given routes.

(*b*) The level of efficiency of the locomotive.

(*c*) Means for comparing one locomotive with another.

The experimental data presented are therefore divided into two parts. The first defines the relationship between coal "as fired," water as taken from the tender, tractive effort and horsepower as measured at the drawbar, all being data directly applicable to the immediate commercial purpose of examining train loadings and schedules to obtain reductions in fuel consumption by working locomotives, where possible, nearest their point of maximum operating efficiency.

The second part is concerned mainly with thermal efficiency, the data presented being, therefore, indicated or cylinder horsepowers, boiler performance, and cylinder and boiler efficiencies, also smokebox draught and superheater performance. These various factors are of more importance to locomotive design. The object of this article is to deal with the application of the test data as a means to determine economical operation, and refer to the performance of the locomotives.

"Hall" class locomotive No. 7916 on road test at Wantage Road

In considering the performance results as given in the test bulletins, the following points should be observed:

(*a*) All relationships based on coal refer only to a definite kind of coal. Variations in the quality of coal fired have a direct bearing on the amount used irrespective of the locomotive design or its condition. As far as possible, each locomotive is tested with two different qualities of coal as a minimum, one of which is common to the different locomotives tested.

(*b*) By the nature of the testing procedure, all values shown on the graphs are obtained under constant conditions of operation maintained over a period of time. So far, data are not available for operation under fluctuating rates of power output.

(*c*) The tests described have been made under one or other of two methods of locomotive testing. One of these is usually arranged as a combination of stationary plant tests with dynamometer car tests on the road at constant rates of steam production, but which may also consist of the

latter only, a method initiated and developed by the former G.W.R. at Swindon (controlled road testing). The other is based on the use of mobile testing plant at constant speeds, a method initiated by the former L.M.S.R.

(*d*) The locomotives tested were in good condition. Clearly results obtained with locomotives in a run-down condition are desirable, though it would obviously be most difficult to obtain any data under such conditions which could be representative of a whole locomotive class.

(*e*) Since one of the main purposes of these tests, as presented by the bulletins, is to explain to the Operating Department the manner in which the test results can be applied when train schedules are under consideration, a section is included setting out this aspect in simple terms.

Boiler and cylinder performances and efficiencies were established in the first place on the stationary testing plants at the Rugby Testing Station, or at the Swindon Works where also the draughting arrangements were examined and proved. The first series of these tests was made with live steam injector feed, for the reason that the steam produced by the boiler and the steam utilised by the cylinders can be determined more accurately and related to the coal rate and power respectively than is possible when the exhaust steam injector is used.

The test bulletins appertaining to locomotives fitted with exhaust steam injectors give the test results obtained when this type of injector supplies the boiler feed water. In the second instance, boiler and cylinder performances were reproduced and their efficiencies confirmed by road tests by the controlled road testing system using a dynamometer car as the testing unit. This enabled the coal and steam rates to be related to the work done at the drawbar under road operating conditions.

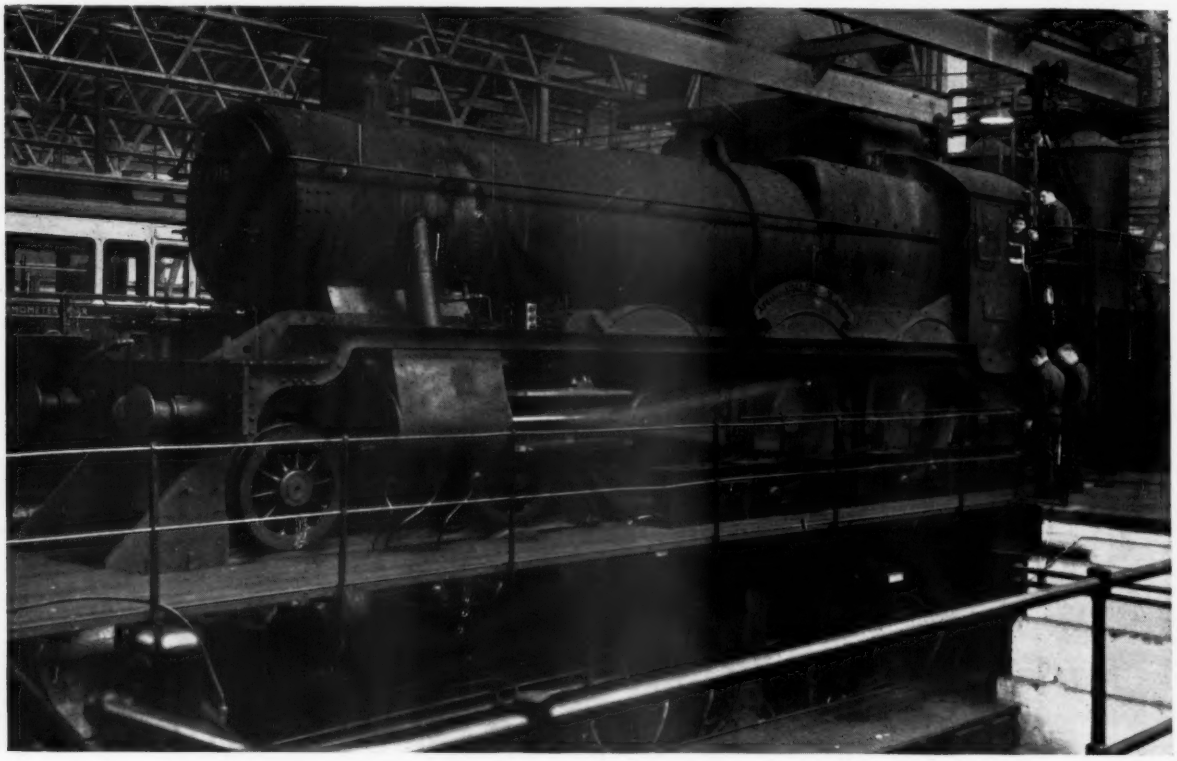
Stationary Plant Tests

The basis of all testing was the maintenance of constant rates of combustion and evaporation over relatively long periods. During each test, coal and water rates were measured by what is called the summation of increments method, developed at the Swindon Plant. Using this method, coal is placed at the disposal of the fireman in equal increments, the weight being chosen so that it requires from 5 to 7 minutes for its consumption, while the water in the gauge glass is held at a constant level. The time is taken at the instant the fireman finishes one increment and is given another.

The water injected up to this moment is also measured. In this way, a plot can be made as the test progresses of the water fed to the boiler and the coal fired against lapsed time. The validity of the test is shown when it is possible to draw fair straight lines through the points on the graph, covering at least the minimum stipulated test period. The slopes of the lines establish the coal and water rates; as a check, the water/coal ratio, reckoned at the end of each increment, is also plotted.

Using this method, a few tests are made at constant speed, but the majority are made at variable speeds and constant rates of evaporation with the help of an instrument which provides an indication of the rate of steam exhaustion. This instrument, which uses the blastpipe orifice as a metering device, is not employed to establish an evaporation rate, but only to show the variation from the mean, the exact value being given by the slope of the water line of the summation of increment graph.

Variable speed tests on the stationary plant are made by running the first part of the test at constant speed until the coal and water rates appear firmly established; the mean value of the flow indication given by the flow instrument is then ascertained and a movable pointer on the scale of this instrument, fitted on the control table, is set at the value indicated. Cut-off and speed may then be altered together in such a way that the flow indication is kept at the set pointer, and this is arranged to be done in steps of about 5 m.p.h. The cut-off is noted at each speed step and indicator cards taken, care being at the same time taken to see that the flow



"Hall" class engine on the stationary test plant at Swindon

indication appears exactly opposite the fixed pointer.

In this manner, a wide range of cut-offs and speeds can be covered and indicator diagrams taken at constant rates of evaporation, checked by the summation of increments plots, which must be found to follow linear extensions of the straight lines through points made during the constant speed portion of the test. Hence, in one variable speed test the dual relationship between coal and steam, steam and power, can be obtained over a wide working range and, by repeating the process at other rates of constant evaporation, the whole working range of the locomotive can be covered.

For each variable speed test, mean effective pressure/speed/cut-off curves, related to a known steam rate, are constructed without the necessity of adjustment for boiler pressure variations. The curves corresponding to various tests are correlated by drawing Willans' lines, constructed for a number of suitable speeds. These are used as the basis for the construction of the indicated characteristics, and also provide data on full and partial regulator working on economy.

The tests as described are made with the live steam injector so that the steam actually fed to the cylinders can be accurately established. This is, of course, important, because on the accuracy of this measurement depends the validity of calculations made to determine cylinder efficiencies.

Exhaust Steam Injector and Road Tests

These tests are followed by a series using the exhaust steam injector, so allowing of the economy of this injector to be determined. The indicated characteristics for the live steam injector are then adjusted, having regard to all variations in the principal relationships, to produce the indicated characteristics which would appertain for exhaust steam injector operation.

The controlled road testing system consists of running the locomotive with normal loads, which include the dynamometer car as the leading vehicle, at constant rates of evaporation. The consumption of coal and water can thus be computed and related to the work done on the drawbar at defined constant rates of steam production. The control of the rates of evaporation and firing is accomplished by the use of the flow indicator previously mentioned, in conjunction with the summation of increments method of measuring the coal and water rates in the manner described when dealing with the testing procedure followed at the stationary plant when carrying out variable speed tests.

The fireman uses coal tipped from bags holding a definite weight of coal on to the shovelling plate. All bags contain the same weight of coal. Each time a bag of coal is fired it is noted in the dynamometer car and the water fed to the boiler from the tender is at the same time read from the water meter. Any overflow from the injector is led to a self-discharging tank which automatically signals the discharge of a known amount to the dynamometer car. The steam flow indicator is a very important part of the test equipment.

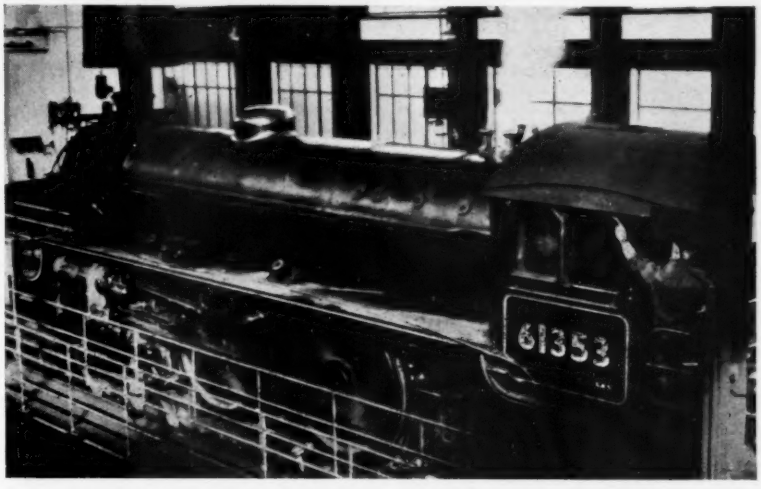
It operates a manometer in the dynamometer car, also one in the cab for the engine driver and a further one in the indicator shelter. The flow indicator scales are fitted with pointers set to a pre-arranged mark corresponding to the required constant rate of evaporation. The engine driver, working with full or partial regulator, as may be previously decided upon, then adjusts the rate of cut-off as the speed in m.p.h. varies so as to hold the manometer reading level with the pointer. Indicator cards are only taken when the manometer reading corresponds with the set pointer.

Locomotive No. 61353 *on road test at Skipton*

The level of the water in the gauge glass is kept constant and the consumption of coal and water, based on the summation of increments, are checked by plots, as explained in connection with stationary test plant procedure. Any number of tests may be run on the road with varying train loads, passenger vehicles or freight, at various working rates, and complete performance data, based on d.b.h.p. obtained, and efficiency characteristics constructed. Obviously, train and locomotive resistances may also be easily computed.

The foregoing general description of the testing methods adopted is necessary before reference can be made to the specific performance of the locomotives referred to in the Test Report Bulletins. When considering the different graphs, note should be made of the following. Some of the graphs have curves marked "grate" limit and "front end" limit. An explanation is necessary. The "grate" limit is reached when the rate of evaporation ceases to increase with any further increase in the coal fired. Before the "grate" limit is reached, it may happen with some kinds of coal that the draught cannot supply sufficient air to support combustion.

This is called the "front end" limit; it is found by experiment on the stationary plant by finding the maximum rate of evaporation at which a balance may be continuously maintained between steam demand and production. Where a "grate" limit only is given, that represents a rate which has actually been maintained through



"B1" class locomotive on the stationary test plant at Rugby

L.M.R. class "4" locomotive No. 43094 undergoing road test

the stipulated test period. When the "front end" limit is given, it also represents a rate which has actually been fully maintained throughout a specified test period. The corresponding "grate" limit shown has been obtained by extrapolation.

Tests with "Hall" Class Locomotive

The "Hall" class locomotive allocated to the tests was one of the later engines of the class having a larger superheater housed in 21 flues, as compared with 14 previously. With this superheater, the steam temperatures ranged from 500° F. to about 580° F. at evaporation rates of from 8,000 to 22,000 lb. of water per hr., respectively. Tests were made using two kinds of coal, and the temperatures given were the same for both.

Using Markham coal having a calorific value of 14,330 B.Th.U. per lb. "as fired," the evaporation could, however, be carried to a maximum of 23,110 lb. per hr., when the steam temperature reached was close to 600° F. Some particulars of the coals used for the tests are as below.

Name of coal	Markham	Blidworth
B.Th.U. per lb. "as received"	14,330	12,490
B.Th.U. per lb. dry ...	14,550	13,840
From and at evaporative value, water lb., per lb. of coal "as received"	14·82	12·92
Moisture per cent, "as received"	1·5	9·7

The engine was built in 1950 and had run 22,000 miles before the tests. Pistons and valves had not been examined, nor had it been in the shops for repairs. At the conclusion of the tests, the engine had run 26,000 miles. Markham coal is a Welsh steam coal and, in common with this type, is of a friable nature. Each increment of coal included a proportion of fines amounting to 8 per cent. by weight. Fines have an effect on boiler efficiencies and, in order to assimilate normal conditions when using this type of coal, care had to be taken to include fine coal in each increment fired.

(To be continued)

BRITISH ALUMINIUM SOUTHAMPTON BRANCH OFFICE.—The British Aluminium Co. Ltd. announces the opening of a Southampton branch office, to handle sales of unwrought and fabricated aluminium and aluminium alloy in the counties of Sussex and Hampshire. Mr. W. H. Marston has been appointed Area Representative; the address of the new branch is 20, Brunswick Place, Southampton. Telephone: Southampton 76780. Telegrams: Britalumin, Southampton.

INDUSTRIAL LIGHTING FITTING.—Dorman & Smith Limited has introduced a new bulkhead type lighting fitting for lamps up to 100 W. The body is of die-cast aluminium alloy, drilled and tapped one hole for ¾ in. conduit, and the opalescent prismatic glass gives wide light dispersion. For speed and ease of fixing the two fixing holes are at brick width. The porcelain B.C. lampholder is reversible.

REELS FOR WIRE.—Four years ago, when the British Standard for reels for covered winding wires was published, it was thought that it would be a long time before it could be fully adopted in view of the alterations in machinery, etc., that would be required. In practice, however, the standard has proved so successful that it is now possible still further to reduce the range of sizes of reels and a revision of B.S. 1489, "Reels for covered, solid, round winding wires for electrical purposes," has been issued. The modifications to B.S. 1489 have made it necessary to make some adjustment to B.S. 1559, "Reels and wooden drums for bare wire, stranded conductors and trolley wire for use in the United Kingdom," and an amendment slip has been issued. The British Standards Institution has also published B.S. 1888, "Precision reels for bare and oxidised resistance wires (0·0005-0·0048 in. diameter inclusive)." Copies of the standards may be obtained from the British Standards Institution, Sales Branch, 24, Victoria Street, London, S.W.1, price 2s. 6d. each. The amendment slip is also available gratis.

HUMAN RELATIONS IN INDUSTRY.—The Ministry of Labour & National Service has issued a comprehensive report of the Human Relations in Industry Conference which was held in London under the auspices of the Ministry from March 18 to 20 this year. The conference was called by the Ministry for the purpose of assessing the results of action taken concerning human relations in industry during the past few years by the various bodies interested, and of considering what still needs to be done. It was attended by about 400 delegates and observers from the British Employers' Confederation, the Trades Union Congress, the managements of nationalised industries, several Government Departments and a great many institutions and voluntary organisations dealing with the problems of labour in industry. Copies of this "Report of the Human Relations in Industry Conference" are obtainable from H.M. Stationery Office or through any bookseller, price 3s. 6d. net (3s. 8d. post free).

RAILWAY BENEVOLENT INSTITUTION.—The board of the Railway Benevolent Institution on September 24 decided to grant annuities to seven widows and 15 members involving an additional annual liability of £378. Forty-eight gratuities were also granted amounting to some £572 to meet cases of immediate necessity, and a gratuity of £55 made in respect of a child. Grants made from the casualty fund during the month of August amounted to £518.

COMPETITION FOR AUSTRIAN TRANSIT TRAFFIC.—The efforts made by the German Federal Railways to attract traffic to and from Austria to Western German ports, mentioned in our issue of September 26, are referred to by Major-General Sir John Winterton, Commander of the British/U.S. Zone and Military Governor of Trieste, in his report for 1951. The port of Trieste, he states, is facing increasing competition from the German railways.

RAILWAY NEWS SECTION

PERSONAL

Mr. T. Harold Cooper, Vice-President, Canadian National Railways, has retired.

Mr. D. R. White, Divisional Signal & Telecommunications Engineer, Derby, London Midland Region, has retired.

Mr. J. A. Cavalli, who, as recorded in our August 22 issue, has been appointed Chief Accountant of the General Mitre Railway, Argentina, was born in Paraná, Province of Entre Ríos, where he received his education and studied to become a Public Accountant. Until 1936, he was engaged in commercial activities, and in 1937 joined the Income Tax Department; he was appointed Assistant Inspector in 1938 and Inspector in 1942. In 1948 Mr. Cavalli was transferred to Buenos Aires, and he joined the Chief Accountant's Department of the General Mitre Railway four years later.

Mr. J. A. Cavalli

Appointed Chief Accountant, General Mitre Railway, Argentina

Mr. G. C. Phillips has been elected a Director of the English Electric Co. Ltd.

British Railways, North Eastern Region, announce the appointment of Mr. M. A. Oldham, Assistant District Goods Superintendent, Newcastle-on-Tyne, to Assistant to Commercial Superintendent (Freight), York, in succession to Mr. W. P. Allen, who is retiring.

The funeral of Mr. C. W. Needham, who, as recorded in our October 3 issue, retired in 1933 after over 20 years in charge of the Claims & Compensation Section of the General Manager's Office, G.W.R., and died on September 28, was held at Golders Green on October 2. Among those present were: Messrs. K. W. C. Grand, Chief Regional Officer; A. S. Mills, a former District Goods Manager, G.W.R. (also representing Sir Felix J. C. Pole, General Manager, G.W.R., 1921-29); and H. E. Hedges, General Assistant to Chief Regional Officer.

Mr. D. A. F. Quekett, Assistant to District Goods Superintendent, London City, Eastern Region, Liverpool Street, has been appointed Assistant District Goods Superintendent, Sheffield, Eastern Region.

Mr. J. R. Miller, Traffic Manager, Auckland Harbour Board, has been appointed by the Council of the Institute of Transport to be its Honorary Corresponding Member for New Zealand, in succession to Mr. F. W. Aickin, former General Manager, New Zealand Government Railways.

Mr. J. A. Faulkner, Industrial & Staff Agent, Western Australian Government Railways, who, as recorded in our September 19 issue, has been appointed Industrial & Staff Manager, in charge of the new Industrial & Staff Branch, became a junior clerk in the Traffic Branch in 1910. His subsequent railway career included 21 years' service in the Traffic Branch as Livestock Clerk, Train Control Officer, Transit Officer, Timetables Clerk and Chief Transport Clerk. In 1942, he transferred to the Secretary's Branch as Clerk-in-Charge, Commercial Section, and was promoted to Industrial & Staff Agent in 1949.

Mr. J. A. Faulkner

Appointed Industrial & Staff Manager, Western Australian Government Railways

The Chairman, Captain A. R. S. Nutting, and the Managing Director, Mr. Donald F. Brown, of Westinghouse Brake & Signal Co. Ltd., held a cocktail party at the Dorchester Hotel, London, W.1, on October 1 in connection with the Commercial Motor Show.

We regret to record the death on September 30, at the age of 81, of Dr. F. C. Lea, O.B.E., D.Sc., M.I.C.E., M.I.Mech.E., Wh.Sc., A.R.C.S., Emeritus Professor of Mechanical Engineering in Sheffield University, and President of the Institution of Mechanical Engineers, 1943-44. He had served an apprenticeship with the L.N.W.R. at Crewe, and for some time afterwards had been an assistant in the Civil Engineering Department. He was also at one time a Director of Edgar Allen & Co. Ltd.

Among those on board the *Empress of Scotland*, which left Liverpool on October 7 for Montreal *via* Greenock were Mr. J. C. Patteson, European General Manager, Canadian Pacific Railway, and Mr. G. A. Hobbs, former European Passenger Manager, Canadian Pacific Railway, London.

Mr. Edgar D. Zeigler, Assistant to the General Traffic Manager, Pennsylvania Railroad, U.S.A., who, as recorded in our September 26 issue, has been appointed Foreign Freight Traffic Manager, with headquarters in Philadelphia, has served in the Freight Traffic Department for 29 years. He began in the general freight office at Pittsburgh as a tariff file clerk in 1923, after graduating from Ohio State University, and subsequently became Freight Representative at Pittsburgh; District Freight Agent at Akron, Ohio; Division Freight Agent at Wheeling, West Virginia, and at Wilmington, Delaware; New England Freight Agent with headquarters at Boston; and Assistant General Freight Agent at Philadelphia. He had been Assistant to the General Traffic Manager since 1945.

Mr. Edgar D. Zeigler

Appointed Foreign Freight Traffic Manager, Pennsylvania Railroad, U.S.A.

We regret to record the death on October 2 of Mr. A. E. Ryeland, Director of E. Boydell & Co. Ltd. He had been connected with the company since its inception.

We regret to record the death, at the age of 75, of Mr. H. Cunningham, M.I.C.E., Chairman, Sir William Arrol & Co. Ltd. He had at one time been on the Chief Engineer's staff, Caledonian Railway, and was resident engineer for that company in the construction of the bridge over the Clyde at Glasgow Central Station.

Mr. H. Bell

Appointed District Motive Power Superintendent, Southend (Plaistow), Eastern Region

Mr. S. A. Claydon

Appointed Assistant Manager (Shipping Services), Parkeston Quay, Eastern Region

Mr. H. J. Goodchild

Appointed Assistant (Salaried Staff), Regional Staff Office, Eastern Region

Mr. H. Bell, Assistant District Motive Power Superintendent, Manchester South, Eastern Region, who, as recorded in our issue of August 29, has been appointed District Motive Power Superintendent, Southend (Plaistow), was educated at St. Peters School, York, and Highgate School, London. He received training at the Central Marine Engine Works, West Hartlepool, followed by shipyard experience on the introduction of welding and served for seven years with Messrs. Digby & Partners, Consulting Engineers, as Senior Assistant dealing with general engineering and electrical work. Mr. Bell joined the L.N.E.R. in the Locomotive Running Department at Doncaster in 1940, and held various positions in the Southern Area until appointed Assistant District Locomotive Superintendent, Gorton, in 1945. He was appointed Assistant District Motive Power Superintendent, Manchester South, on fusion of Longsight and Gorton Districts in 1951.

Mr. A. S. Leybourne, Assistant Chief of Police, South Western Area, British Transport Police, is retiring on October 25.

We regret to record the death on October 7 of Mr. Duncan MacArthur, a Director of Metropolitan-Vickers Electrical Export Co. Ltd., Metropolitan-Vickers-GRS. Limited, and Metropolitan-Vickers South Africa (Pty.) Ltd.; and Chairman of Sunvic Controls Limited, and of Newton Victor Limited.

Mr. Alan P. Good, on medical advice, has relinquished his chief executive post as Managing Director of the Brush Electrical Engineering Co. Ltd., the parent company of the Brush-Aboe group. He will remain a Director and Deputy Chairman of the company. Mr. Miles Beevor, who was appointed Managing Director of Brush Electrical in early 1951, has succeeded him as Managing Director. Mr. Ian T. Morrow, Financial Director of the company, has become Deputy Managing Director. Mr. Beevor was Chief Secretary & Legal Adviser to the British Transport Commission for four years, until he joined Brush last year.

Mr. S. A. Claydon, Assistant District Operating Superintendent, Leeds, North Eastern Region, who, as recorded in our issue of September 5, has been appointed Assistant Manager (Shipping Services), Parkeston Quay, Eastern Region, joined the L.N.E.R. as a clerk in the Goods Department and was transferred to the Continental Traffic Manager's Office in 1930. He became a traffic apprentice by competitive examination in 1936 and was trained in the Southern Area, L.N.E.R. He was appointed Supernumerary Assistant to the District Superintendent, Cambridge, in 1939. In the war of 1939-45 he held a commission in the Royal Engineers, serving in Movement Control and Transportation units in various theatres. On resuming railway service, Mr. Claydon returned to the Operating Department and served in the Stratford, Manchester, Doncaster, and Nottingham Districts before being appointed Assistant District Operating Superintendent, Leeds, in 1950. Mr. Claydon was the Operating member of the Eastern Region Branch Line Committee between 1949-50.

Mr. M. S. Hatchell, Principal Assistant (Locomotives), Mechanical & Electrical Engineer's Department, London Midland Region, Derby, has been appointed Mechanical & Electrical Engineer, Scottish Region.

We regret to record the death on September 29 of Mr. J. S. H. Grant, a former Vice-Chairman of the Rhodesia Railways Board.

We regret to record the death on October 2 of Mr. Ernest Prebble, M.I.C.E., Assistant Engineer (Permanent Way), L.M.S.R., 1928-29.

We regret to record the death, at the age of 75, of Sir Archibald McKinstry, D.Sc., M.I.E.E., M.I.Mech.E., who resigned in 1930 as Chairman, Metropolitan-Vickers Electrical Export Co. Ltd., and a Director of Metropolitan-Vickers Electrical Co. Ltd. In 1947 he was a Member of the Appeal Tribunal (Road & Rail Traffic Act, 1933).

Mr. H. J. Goodchild, Second Assistant (Wages Staff), Regional Staff Office, Eastern Region, Liverpool Street, who, as recorded in our August 8 issue, has been appointed Assistant (Salaried Staff), in that Office, joined the Great Northern Railway at Kings Cross in 1919. After a brief spell in the Motive Power Department, he was transferred to the Chief Mechanical Engineer's Headquarters, L.N.E.R., London, where, until 1928, he dealt with general matters and statistics. He began his career in staff matters in 1928, when he took up a position in the Staff Section of the same Office, and was appointed Chief Staff Clerk in 1935. In 1947, when at Doncaster, where the L.N.E.R. Chief Mechanical Engineer's Headquarters were then located, Mr. Goodchild became Staff Assistant to the Chief Mechanical Engineer. He was a member of the Chief Mechanical Engineer's Staff Sub-Committee from 1946 until April, 1949, when he was appointed Second Assistant (Wages Staff) in the Regional Staff Office, Eastern Region, Liverpool Street, in which capacity he also functioned as the Secretary of Eastern Region Sectional Councils Nos. 3, 4 and 5.

On September 30 at the Mayfair Hotel, London, W.1, Sir Robert F. Fryars, Chairman & Managing Director of A. C. V. Sales Limited and Director of A. C. V. Limited, presided at a dinner to friends and business associates of these companies. Among those present were:—

Sir Michael Barrington-Ward, Messrs. C. K. Bird, C. Blaker, A. Campbell, G. A. Chappell, N. Christensen, C. F. Cleaver, B. W. C. Cooke, J. S. Cox, G. M. Davidson, H. E. Ells, J. M. E. Fell, W. J. K. Gibson, Colonel W. H. L. Gordon, Messrs. S. G. Hearn, R. E. Henderson, Commodore the Rt. Hon. the Earl Howe, Messrs. A. W. Hubble, J. J. Johnson, O. Lindstrom, G. Mathews, G. H. Passey, H. Pederson, T. Pinto Basto, C. W. Powell, C. C. Prior, F. J. Pullen, Major D. Roots Vidler, Messrs. P. J. Sims, O. D. Smith, G. Spitals, sr., G. Spitals, jr., G. B. Stubbs, Major-General the Rt. Hon. Sir Frederick Sykes, Messrs. J. S. Tritton, G. Van Twist, W. Van Twist, H. R. Venables, L. B. Walker, A. L. Weir.

New Signalbox at Euston

Important stage in reconstruction at Euston Station

The £300,000 scheme for improved traffic working into and out of Euston Station, reached an important stage on Sunday with the opening of the new power-operated signalbox, with colour-light signalling and complete track-circuiting. The new signalbox has replaced three former signalboxes, and a fourth box will not, in future, be required to deal with main line traffic. The new box contains a 227 all-electric miniature levers frame on an "individual function" basis.

Work may now begin on the lengthening of platforms Nos. 1, 2, 3, 6, 7, and 15 (660 ft. in all), which will enable longer trains to be accommodated. At the same time, the present complicated track layout outside the station will be simplified to permit smoother operation.

Until November 9, there will be some interference to both main line and electric train services. Some trains will be stopped short of destination, others diverted to St. Pancras, and boat trains from Liverpool will run into Paddington, though everything has been planned to cause as little inconvenience as possible to passengers. In addition certain newspapers and parcels trains will depart from Maiden Lane instead of Euston.

Completion of the work will have far reaching benefits on train operation into and out of Euston Station, and much of the present delay caused to incoming trains will be eliminated. On an average day there are over 70 main line and local steam trains into and over 70 out of the station and there are approximately the same number of electric trains each way every day.

The existing signalling at Euston has remained virtually unchanged, although many safeguards have been added, since the Euston-Camden widening of 1905, and the equipment was due for major replacement and modernisation. By the use of modern signalling methods, it has been possible to remove the signalbox from the congested station area and to position it on the Camden side of the second bridge over the immediate approaches to the station, thus providing space for the station improvements.

The new signalbox, which was designed by the Architects Office of the Civil Engineers Department, is of the latest type and is constructed with load bearing brick walls and reinforced concrete floors and roof. A notable feature is the long uninterrupted view obtained from the operating floor. The box is provided with modern amenities including a gas-fired central heating plant. The building contractors were Tersons Limited and the building was completed in eight months' work.

The final layout will have additional operating advantages, including a running movement from the up slow line into the local platforms Nos. 4 and 5 whilst a movement is taking place from the up fast line into any of the main line platforms Nos. 1, 2 and 3, or a movement out of these platforms with empty carriages.

The existing signalling and layout is worthy of some note. The largest signalbox (No. 2), contains two lever frames (total levers 288), one against each side wall, with suitable cross rod connections beneath the floor for interlocking the two frames. Although this signalbox appears to be of no appreciable height, the floor of the underportion is considerably below ground level, in order to accommodate all the necessary equipment.

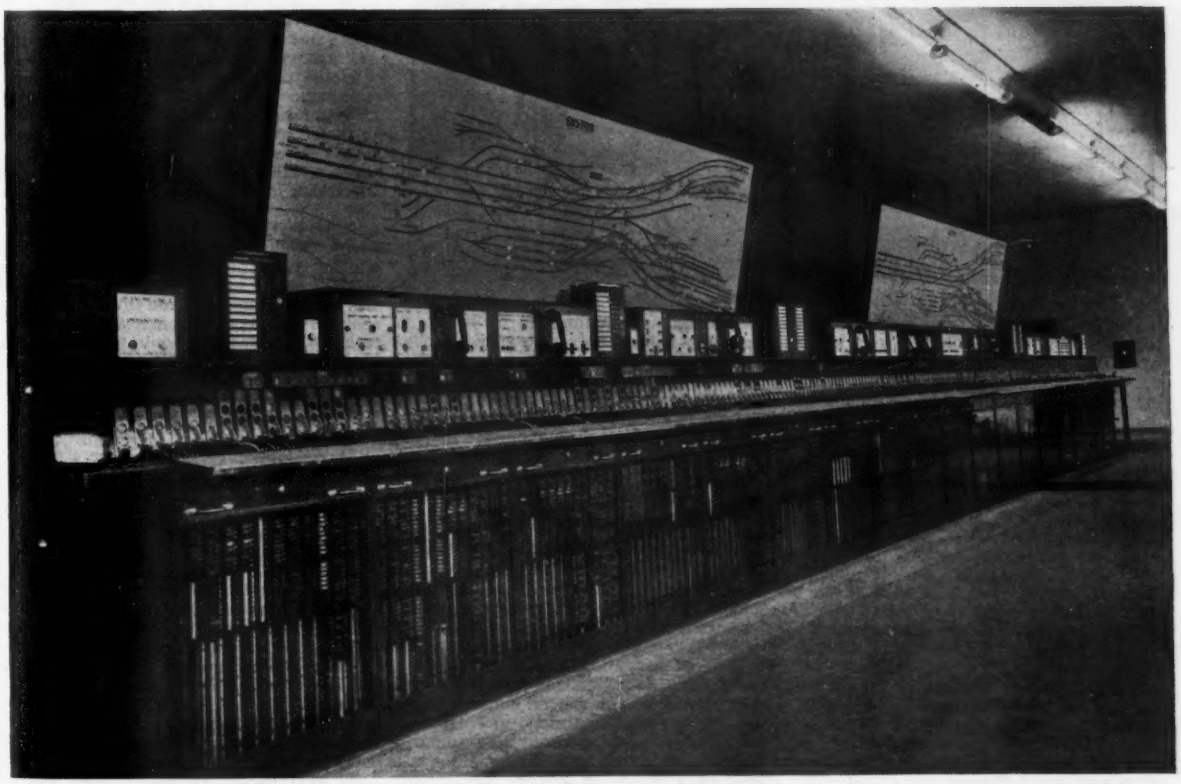
The layout of the approaches to Euston includes extensive flying junctions which allow traffic to pass to and from Euston over two up and two down lines, and provide for the empty carriage trains and light engines to be kept to their own separate lines, on the arrival or departure sides, as required.

New Lever Frame

The new 227 lever frame is of the Westinghouse Brake & Signal Co. Ltd. style L pattern and contains 61 point levers (including two ground frames releases), 126 signal levers (including 50 for ground signals and 5 for controls to Euston carriage sidings box) and 40 spares, thus providing ample cover for any future extensions.

The 61 point levers control 94 electro-pneumatic point mechanisms, with bolt, detector and movement normally combined and placed in the six-foot space.

The signal levers control 32 long-range multi-aspect colour light signals, 26 position light subsidiary signals (with illuminated letter "C" when used for "calling-on" purposes), and 21 short-range yellow



Interior of the new signalbox at Euston, showing the all-electric lever frame

aspect units, these last being used for all movements from a running signal to a siding, which is not track-circuited. Route indications are given as required by theatre type units in which the lamps are common and switched as necessary to form the display of individual letters or figures. 35 position light ground signals, all mounted as single units, are provided for the control of all shunting movements.

Track Circuits

The signal structures in the layout include six gantries (one of 71 ft. span), four canti-levers, four full brackets and five of lighter construction. The larger structures are of all-welded construction. A.C. condenser fed track circuits have been used, with as many of the track relays as possible mounted in the relay room of the new signalbox. In all, 127 track circuit indications appear on the black and white duplicate illuminated diagrams in the new signalbox. The track circuit at the head of platform No. 5 is replaced by an axle counter section, however, as vehicles stand on this portion of line for so long that track circuit would be unreliable.

Train describers of the storage type (in general three indications in the up direction and four in the down) will replace block telegraph working on the four running lines, and in each case they will work to the adjacent signalbox. These, and other apparatus such as signal telephones, form a special top panel to the lever frame.

The signalbox apparatus, including the lever frame, and compressed air system and point mechanisms have been supplied and installed by the Westinghouse Brake & Signal Co. Ltd., which has also wired all the apparatus at the outside locations. Train describers were supplied by the Siemens and General Electric Railway Signal Co. Ltd. The cabling and provision of signals have been carried out by the Regional S. & T. staff under a Resident Engineer, New Works. The whole work is being executed to the specifications and requirements of Mr. S. Williams, Regional S. & T. Engineer, to meet the needs of the Operating Department. When completed the continuous colour light signalling will extend from Wembley Central into Euston.

Inspection of Signalbox

A press inspection of the new signalbox was conducted on October 2 by Mr. S. Williams and among those present were:—

Messrs. J. W. Watkins, Chief Regional Officer; S. G. Hearn, Operating Superintendent; J. Elliott, Assistant Civil Engineer; J. M. Harrison, Regional Architect; L. W. Cox, District Operating Superintendent, London (Western); George Dow, Public Relations & Publicity Officer; H. Turrell, Stationmaster, Euston.

Reconstruction at Bury Bolton Street, L.M.R.

Inquiry office and shops in new frontage

The London Midland Region has recently reconstructed Bury Bolton Street station frontage, booking hall, and footbridge. Set back to conform to a future road widening scheme, the new building is of modern design. The entrance, surmounted by a new vitreous enamel station name sign and flanked by an inquiry office and bookshop, leads directly to the concourse, off which the booking office, news, and tobacco kiosks are situated.

The shop fronts are of extruded bronze. Main entrance doors, booking office front, and fronts to kiosks are of polished Nigerian walnut. The dado on each side of the concourse consists of blue-grey tiles. A feature of the booking office windows is the introduction of the latest type of Hygiaphone unit, which gives audibility with added comfort to the booking clerk through the reduction of draughts. The ticket barriers are placed at the end of the concourse, from which the new reinforced concrete footbridge, with staircases, connects with the platforms.

Every opportunity has been taken to ensure maximum illumination by means of clerestory lighting above the booking office window and kiosks, ample window space on the footbridge and the latest design of artificial ceiling lighting in the concourse, which has a sound absorbing ceiling. Central heating is used throughout the booking office, shop, and kiosks, and radiators, discreetly placed, will add comfort during the winter months to the ticket collectors on duty at the barriers.

Facing and Flooring Material

The entrance and columns are faced with Terrazzo, which material is also used as a floor finish in the concourse. The general fenestration is taken down to floor level, with brick panel dado on the inside, and consists of hardwood frames, glazed above the dado in clear glass and behind the dado with Vitrolite. The general construction of the building and footbridge at road level, consisting of reinforced concrete frame with Accrington facing brick panel infilling, is built off a reinforced concrete substructure.

The building was designed by the London Midland Region Architect, Mr. J. M. Harrison, under the direction of the Civil Engineer, Mr. J. Taylor Thompson.

Opening of Brussels Junction Railway

King Baudouin of the Belgians on October 4 inaugurated the Brussels Junction Railway, travelling by special train, hauled by an electric locomotive from the Halte Centrale to the Gare du Midi. At the Halte Centrale the King was received by M. Segers, Minister of Communications, and by MM. Brunfaut and Claeys, Chairmen respectively of the Permanent Committees of the Brussels Junction and Belgian National Railways.

M. Claeys said in a speech outlining the part played by the Belgian National Railways in constructing the new line, including reconstruction of the Gare du Nord and the Gare du Midi, and in its operation, said that the S.N.C.B. were running 180 trains a day over the two tracks now brought into use out of the eventual total of six. Next year, when all six tracks were in use, 600-800 trains daily would work over the line.

Railcar Service to City Airport

M. Brunfaut said that the forthcoming railcar connection between the Halte Centrale, where a special platform is provided for passengers from and to the adjacent Sabena (Belgian National Air Lines) terminal, and the city airport at Melsbroeck was the object of much interest among air line operators as a solution of the city to airport transport problem in other cities.

Altered Operating Arrangements

A description of the new line was given in our issue of May 23, 1952, with an account of the temporary operating arrangements in force from October 5, over the two tracks now in use. Of the three stations between the Nord and Midi Stations, Congrès, Centrale, and La Chapelle, the last-named will only be open to traffic next January. Multiple-unit electric trains to Antwerp start from the Gare du Midi. International trains from Ostend to Cologne and Basle and beyond, trains from Lille, and certain Paris-Brussels trains call at the Midi, Centrale, and Nord stations, but Paris-Amsterdam trains are worked as before from the Midi station, over the Ceinture line west of the city, to Antwerp. Goods trains are worked over the Junction Railway at night.

Public Transport Association Luncheon

Viscount Swinton on practical and constructive criticism of the Government's proposals for transport

The annual luncheon of the Public Transport Association was held at the Connaught Rooms, W.C.2, on October 3, with Mr. Stanley Dudman, Chairman of the Council, in the Chair.

Viscount Swinton, Chancellor of the Duchy of Lancaster and Minister of Materials, who proposed the toast of the Public Transport Association, said the Association had rendered valuable service both to its members and to the public. The Government would be producing its Transport Bill during the next session and in this it had only one object—to enable British transport to give the most efficient service to the public and to trade and industry. It was a good plan to publish ideas and proposals and to mould and improve them in the light of practical and constructive criticism. That criticism would be all the more constructive if it had something definite to work on. Mr. Churchill had done this during the war with National Health and National Insurance; they had done this with Transport and Steel. He thought he was at one with most people in his belief that there should be no ideological prejudice in business matters. The best guide was practical experience, honestly learned, and applied without prejudice. That is what they would seek to do in Transport, and it would be foolish and wrong to do other in a service of such importance.

Referring to planning, Viscount Swinton said he believed it was right if it was of the right sort. There was a difference between strategical planning and tactical interference, and a wise commander would not try from G.H.Q. to meddle with every platoon. Commenting on competition between nationalised and private industry, he said he believed all should be subject to the licensing authority and the test should be which could give the best service. Integration could be either good, or bad, and there was no merit in itself in bigness, or smallness. It was easier to make a business too big than too small. Decentralisation, unlike integration, was not an abstract term, but a practical matter.

Mr. Dudman, replying to the toast, welcomed the many guests. In Lord Swinton they welcomed one who was closely associated with their industry for, in addition to his office as Chancellor of the Duchy of Lancaster, he was Minister of Materials, involving a special responsibility in the rearmament programme and the task of striking the balance between the needs of the home and export markets. In making the observation that Lord Swinton was closely associated with their industry he had in mind that he had kept closely in touch with the developments which preceded the introduction of the Transport Bill, and what had happened since. Welcome as the proposed measure was, the industry would not like it to be thought that it met wholly with the approval of the private enterprise operating interests. Operators were concerned that the Bill was not so positive in its terms as they thought it should be in the matter of the steps to be taken to arrest and reverse the process of nationalisation. He paid tribute to two Ministers and members of the Cabinet present at the luncheon, whose records were also respected by the Opposition: Lord Woolton, the Lord President of the Council, and Lord Leathers, Secretary of State for Co-ordination of Transport, Fuel & Power. They had hoped to have the Minister of Transport with them, but in his absence welcomed a number of friends from his Ministry. The ramifications of the industry were such that their problems were legion. Operational difficulties could be alleviated considerably by a more sympathetic and realistic outlook by several government departments.

Much attention had rightly been focused on the remarks attributed to an Inspector of the Ministry of Transport hearing the Appeal of four bus companies, who had been refused freedom of duplication on their services between Manchester and London; he had seen justification for this refusal, although such freedom had already been granted to a state-owned bus company between Liverpool and London. They deplored his remarks and found it difficult to believe that the Minister of Transport could associate himself with his Inspector's views, although he had adopted his report. The Inspector by his remarks had seemed to imply that the mere decision of a licensing authority was of little concern to a state-owned company, which could still please itself as to the services it provided.

As an industry they were struggling against the heavy odds of ever mounting overheads and operational costs. Increases in material costs and rising labour charges could only be passed on to the travelling public in higher fares, involving an increase in the cost of living. One of the most serious concerns was the state of the roads. Out of the £300,000,000 a year extracted from the motor using public, the Treasury was allocating £25,000,000, or so, to the roads of this country, which, small as it was, was not used to the best advantage.

Rail Facilities for Uskmouth Power Station

A scheme for dealing with the large quantities of coal required to feed the new generating station at Uskmouth, Newport (Mon.), has been brought into operation by British Railways, Western Region. Engineering work has included the conversion into a double line of the three-mile single track on the East Usk branch which leaves the South Wales main line near Somerton Road Bridge, Newport. Apart from the extensive length of new permanent way required, the scheme involved the widening of several bridges to accommodate the second line of rails.

Two new signalboxes have been erected, one near the Corporation Road Bridge and the other at Uskmouth at the end of the branch, which connects with the extensive siding layout of the British Electricity Authority. Owing to the distance from the signalboxes, certain points are electrically operated.

Loop lines have been laid at Corporation Road signalbox to enable traffic for the works situated on the branch to be dealt with while trains of coal and empties to and from the power station are passing. The siding accommodation at East Usk Junction marshalling yard is also being increased and new staff buildings provided.

It is expected that coal will start to pass immediately, and when the new power station is completed it is expected that 12 to 14 trains of coal will pass daily, together with a corresponding number of empty wagon trains in the reverse direction.

The new facilities will be of considerable use in dealing with traffic to and from the works adjoining the branch, and any new factories or other establishments which may be built in the future.

New Diesel Trains for Argentina

The first of the new Ganz diesel trains recently received by the Ministry of Transport under the bilateral trade agreement signed between Argentina and Hungary in 1950 are now being placed in service. The Retiro-San Juan route of the General San Martin Railway has been chosen for the operation of the first units, which run twice weekly for the present, covering the 1,219 km. in 17 hr. at an overall speed of 72 km.p.h. The service will be increased when traffic requirements dictate, and will eventually use the five-coach air-conditioned sets to be received shortly.

The trains now in use comprise two motor coaches, developing 600 h.p. at 1,150 r.p.m., and two trailer coaches. The 12-cylinder motors are mounted in V formation with a turbine supercharger using exhaust gases. Ganz mechanical transmission with five-speed gears and reverse is fitted in all 21 of the new sets. All auxiliary machinery is suspended from the frame of the motor coach. In designing these units, the experience gained with existing Ganz diesel coaches has been invaluable, and special climatic and other conditions have been taken into account.

The coaches are of all-metal construction and are designed for maximum strength and security with minimum weight. Polished birchwood has been used for the interior lining. Extra-wide windows and high-back seats are provided. The seats are reversible and small tables may be placed between them when necessary. Another type of table, made by the railway in Argentina, may be attached to the back of the seat in front. Argentine leather in shades of green has been used for the upholstery. Racks for hand luggage run the whole length of the coaches and there is a special compartment for heavy luggage. During the night the attendant may be called by means of a button which illuminates a small green light indicating the whereabouts of the passenger requiring service. Heating is by means of hot air conduits in the roof, which also provide fresh air when necessary, no dust entering through the intake over the driver's cabin.

All controls are electro-pneumatic, the compressed air valves working electrically. Braking is provided by compressed air and by an electro-magnetic emergency system in the motor coaches. Electric current for lighting, ventilation and auxiliary control equipment is supplied by a dynamo operated by the principal diesel meters and by a special installation of batteries. High-power headlights and both compressed air and electric syrens have been placed in each of the motor coaches.

THOS. COOK & SON TRAVEL TALKS SERVICE.—A travel talks service, staffed by qualified speakers, has been started by Thos. Cook & Son Ltd. It is designed to create wider interest in holiday travel in Britain and abroad, and will operate throughout the autumn and winter; films will be a special feature of the talks.

Staten Island Rapid Transit

South of New York City, across New York Bay, lies Staten Island, served by the system of the Staten Island Rapid Transit Railway, a subsidiary of the Baltimore & Ohio. Its 29 route miles of line comprise a main line of 14¼ miles from St. George to Tottenville, at the south end of the island, with branches from Clifton to South Beach, and St. George to Arlington, the latter prolonged by a freight line which crosses to the New Jersey mainland and connects with the trunk railways there. Passenger traffic on the S.I.R.T. is provided by multiple-unit electric trains operating on the third-rail system at 600 volts, and the passenger traffic density is even greater than that on the Long Island.

For years past the S.I.R.T. passenger traffic has suffered severely from the competition of buses operated since 1947 by the Board of Transportation of New York City, which cover the whole of the island, paralleling all the S.I.R.T. lines. Whereas the S.I.R.T. low fares latterly have not averaged more than 2 cents a mile, the bus fares, previously in 5-cent zones, were altered in July, 1948, to a 7-cent fare for any distance on the island, even up to the full 14-mile journey from St. George to Tottenville. Not only so, but whereas S.I.R.T. passengers, on reaching New York, had to pay the flat 10-cent fare to use the subway services to and from other parts of the city, the New York authorities, from the same date in 1948, instituted a through 12-cent combined subway and bus fare between any part of New York City and any point on Staten Island.

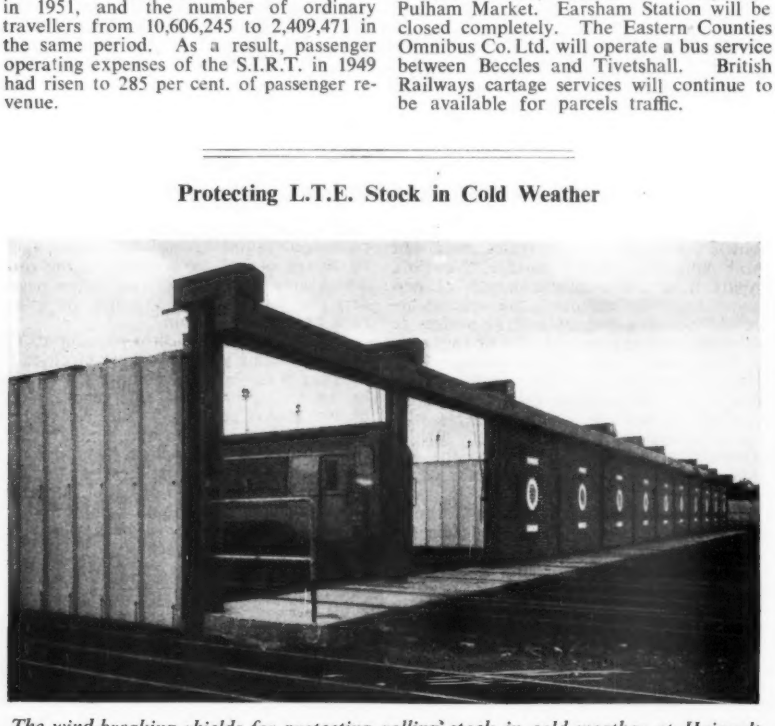
The railway has now found it hopeless to attempt to continue to compete on such terms with the Transportation Board of New York City. The effect has been to reduce the number of S.I.R.T. season ticket holders from 3,796,334 in 1945 to 1,541,440 in 1951, and the number of ordinary travellers from 10,606,245 to 2,409,471 in the same period. As a result, passenger operating expenses of the S.I.R.T. in 1949 had risen to 285 per cent. of passenger revenue.

In the eight months from July 1, 1951, to February 29, 1952, the island buses alone lost $1,589,659, which was met out of City revenues. To reduce these losses, the New York City authorities, which already had increased their combination subway-bus fares to 15 cents, abolished them in July, 1952, and reverted to the separate 10-cent charge for a subway journey, and a 10-cent fare for any bus journey on Staten Island. This had the effect of bringing back a little traffic to the S.I.R.T., but did little to reduce its heavy loss on passenger operation. The Staten Island Rapid Transit Railway has therefore renewed an application first made in 1949 to the New York Public Service Commission (and then denied), for authority completely to abandon its passenger service.

The S.I.R.T. has had under discussion for some time with the New York authorities proposals for selling the whole undertaking to the City, subject to the railway retaining the right to work freight services over certain sections of the line. It is obvious that the present situation cannot continue, and equally that passenger operation over the line from St. George to Tottenville cannot be abandoned in view of the public service that it renders. If the City does take over, as seems probable, it will be interesting to see what steps the authorities take to reduce the loss caused by the subsidised competition of their own buses.

BECCLES - TIVETSHALL BRANCH: WITHDRAWAL OF PASSENGER SERVICE.—The Eastern Region announces withdrawal of the passenger service from January 5, 1953, from the following stations on the Beccles-Tivetshall branch: Geldeston, Ellingham, Ditchingham, Bungay, Earsham, Homersfield, Harleston, Pulham St. Mary, and Pulham Market. Earsham Station will be closed completely. The Eastern Counties Omnibus Co. Ltd. will operate a bus service between Beccles and Tivetshall. British Railways cartage services will continue to be available for parcels traffic.

Protecting L.T.E. Stock in Cold Weather



The wind-breaking shields for protecting rolling stock in cold weather at Hainault Depot, London Transport (illustrated in our August 24, 1951, issue), have now been equipped with the roller shutters shown above

Staff & Labour Matters

Railway Wage Claim

The hearing of the wage claim submitted to the Railway Executive by the three railway trade unions for a 10 per cent. increase in rates of pay and enhanced payment for Saturday afternoon began on October 6. Sir John Forster was Chairman of the Tribunal, the other members being Sir Luke Fawcett and Mr. A. J. Espley.

Mr. J. B. Figgins, General Secretary of the N.U.R., said the present application had been made because of the continuing rise in the cost of living and the alteration in relativity of wage and salary rates. He referred to the increase in cost of living since June, 1947, and compared it with the increase in railway pay. There had been, be said, a 10-point rise in the cost of living between the date of the last N.U.R. application in July, 1951, and the submission of the latest claim in May, 1952. In a comparison with pay rates in outside industries it was submitted that railwaymen lay behind in the matter of wages.

The provisions respecting payment for Saturdays as set out in the Tribunal's previous decision (No. 13), Mr. Figgins added, should be replaced by a provision that duty performed between noon and midnight on Saturday will carry half time rate additional to the rates set out in the National Agreements, *i.e.*, in addition to overtime, night rate, and so on. The present flat rate payments were inadequate and had led to many anomalies.

Mr. J. G. Baty, General Secretary of the A.S.L.E.F., referred to the increase in the cost of living since July, 1951, and the effect of the cut in food subsidies arising from the recent Budget. He also drew comparisons between the trend of weekly wage levels since June, 1947, in outside industry and that for footplate staff. Comparison was also made between the present position and prewar.

Mr. G. B. Thorneycroft, General Secretary of the T.S.S.A., said that the claim was based on the following factors:—

(a) The claim is justified by the continuing rise in the cost of living and the fact that the increases in railway salary rates have not kept pace with the increase in the cost of living since prewar.

(b) The percentage increase over prewar for railway salaried staff are less than those for workers generally and for other workers on the railways.

Differentials Inadequate

(c) The present differentials between the grades are insufficient to provide a reasonable incentive to staff to take promotion, and an increase should be on a percentage basis so that relativity should not be further worsened.

(d) Railway salaries are still below those for other nationalised industries and other public services.

(e) In view of the importance of the railways to the nation it is essential that the pay of railway salaried staffs should be adequate.

(f) Duty performed on Saturday afternoon involves the staff concerned in a loss of social amenities. This was recognised by the railways in the offer which they made to the Unions on August 28, 1951. The present arrangements are inadequate. The provision for relating the extra payment to the time of booking on duty results in anomalies, and a better provision would be for actual time worked on Saturday afternoon to qualify for payment at half time rate additional to the rates set out in the existing National Agreements.

At the resumed hearing on October 7, Mr. W. P. Allen, Member for Staff & Establishment, the Railway Executive, explained why the Executive had found it necessary to decline the claim. He said that it was a matter of concern that the Tribunal had been asked for a second time within a year to determine a major wage claim on behalf of the conciliation and salaried staffs. This was the third application received by the Railway Executive in less than two years.

The cost of conceding the application so far as the staffs before the Tribunal were concerned, Mr. Allen went on, would be £22·5 million a year, and if applied to the whole of the railway staff would be £27·5 million. He asked where it would all end if applications were submitted repeatedly in this way. The claim was not justified and the Executive could not make any offer.

Effect on B.T.C. Finances

On the financial aspects of the claim, Mr. Allen said that the probable net receipts of British Railways in 1952 and the prospective net receipts thereafter provided no margin to met the wage applications now under consideration. There was little justification for expecting any increase in the volume of traffic over the next few years, and the only effective way of meeting a substantial increase in wage levels would be an increase in railway charges.

It was doubtful whether the bulk of the passenger traffic could at the moment bear an increase without a disproportionate loss of traffic. The additional money needed for higher wages could be found only by increasing freight rates. A substantial flat-rate increase in freight charges would give a further twist to the spiral of inflation, which still further increased railway working expenses and diminished the spending power of the wage earners.

Mr. Allen went on to explain why the claim was not justified on the grounds of the increase in the cost of living and in comparison with the wage rates operating in outside industry. The present arrangements as to Saturday afternoon working, he said, were satisfactory and generous compared with industries which, like railways, operated 24 hours a day.

The Tribunal then adjourned until the following day.

British Road Services Wage Award

The Industrial Court under the chairmanship of Lord Terrington published on September 25 its findings on claims for increased wages on behalf of certain workers employed by the Road Haulage Executive, namely, *(a)* operating and ancillary grades, and *(b)* engineering, maintenance and repair grades.

Group *(a)* includes motor drivers and their mates and bank staff, such as porters, loaders and checkers; group *(b)* includes skilled, semi-skilled, and unskilled workers, also apprentices and juniors.

The claim submitted by the unions on behalf of the operating and ancillary grades was for the present wage rates to be increased by 10 per cent. During the negotiations the Road Haulage Executive offered to increase pay rates by 5s. a week with proportional increases for juniors, in line with the recommendations of the Road Haulage Wages Council, but this offer was not acceptable to the unions.

The Industrial Court awarded that the wage rates should be increased by 8s. a week for adults, with proportionate increases for juniors with effect from the first full pay period after September 25.

The claim on behalf of the engineering, maintenance and repair grades was also for an increase of 10 per cent. in existing rates. In this case the Executive had not made any offer to the unions. The Industrial Court awarded an increase of 2d. an hour with proportionate increases for juniors with effect from the first full pay period after September 25.

Increase for London Busmen

London Transport bus and trolleybus drivers, conductors, and maintenance men have been granted a pay increase of 7s. a week with retrospective effect to September 17.

Engineering Wages

No agreement was reached at the talks on October 2, between representatives of the C.S.E.U. and the Engineering & Allied Employers' National Federation, and Sir Robert Gould, Chief Conciliation Officer of the Ministry of Labour, in an attempt to end the deadlock over the Confederation's claim. The talks were adjourned until October 8.

Discussions between C.S.E.U. representatives and shipbuilding employers' representatives at the Ministry of Labour on October 7 resulted in an undertaking to consult their central board, which was due to meet on October 9.

Contracts & Tenders

Contracts for a further 22,200 16-ton all-steel mineral wagons have been placed by the Railway Executive with the following:

Charles Roberts & Co. Ltd.: 9,500
Gloucester Railway Carriage & Wagon Co. Ltd.: 6,000
Hurst, Nelson & Co. Ltd.: 6,700

These are in addition to orders for 57,490 similar wagons announced last week as a result of an arrangement between the Railway Executive and the Wagon Building Association, which will extend over the five-year period 1953-57. Reference to the earlier orders was made in our October 3 issue.

The Sudan Government Railways have placed a further order for 100 Athermos type axleboxes with Robert Hyde & Son Ltd.

Maschinenfabrik Augsburg-Nürnberg A.G. has begun delivery from its Nürnberg works of an order for second class open-saloon 5 ft. 3 in. gauge vestibule coaches for the Chilean State Railways.

The French National Railways has ordered from French builders another 19 diesel-electric locomotives of 600 b.h.p., to have Sulzer pressure-charged oil engines.

A recent Reuter's report states that according to the leader of the Turkish trade delegation now in Yugoslavia, Turkey has ordered 1,000 wagons in Yugoslavia. Conditions for increased Turkish-Yugoslavia trade are believed to be favourable and Turkey is particularly interested in rolling stock, bridge construction material and building material.

The Swiss Locomotive & Machine Works, of Winterthur, has delivered the first of the new 6,000 h.p. 122-ton Co-Co single-phase electric locomotives for the St. Gotthard line to the Swiss Federal Railways.

A Reuter's report from Frankfurt states that Dr. Asmaun, Ambassador Plenipotentiary in the Indonesian Economics Ministry, recently arrived there for a visit to West Germany. Dr. Asmaun was invited by the West German Government and is visiting works in the Frankfurt, Düsseldorf, Hamburg and Bremen areas, including the Krupp locomotive works at Essen. A new Indonesian order for 100 diesel locomotives is expected in addition to an order for 700 Krupp steam engines placed some time ago. Dr. Asmaun, who said a new trade agreement between Indonesia and West Germany was likely to follow his visit, is also expected to discuss the question of opening German branch factories in Indonesia.

Maschinenfabrik Esslingen has received an order from the Swedish State Railways for 25 diesel-hydraulic locomotives of 400 b.h.p. with Deutz oil engine and Voith transmission.

Notes and News

King George VI National Memorial Fund.—The Lord Mayor of London has opened on October 4 the King George VI National Memorial Fund, to which the public is invited to subscribe. The fund is intended to perpetuate the memory of King George VI with a statue to be erected in London, and a philanthropic scheme devoted to promoting the physical, mental and spiritual needs of young and old people. All letters addressed to the Lord Mayor enclosing subscriptions to the fund will be carried post free by the G.P.O. to the Mansion House.

Cost Accountants Required.—Applications are invited for the posts of cost accountants required by the Nigerian Government Railway for one tour of 18 to 24 months in the first instance. See Official Notices on page 419.

British Institute of Management.—The Annual Conference of the British Institute of Management will take place at Harrogate from November 13-15. The subjects for discussion cover the chief functions of management and deal with many topical problems.

Gloucester Railway Carriage & Wagon Co. Ltd.—At a meeting of the board of the Gloucester Railway Carriage & Wagon Co. Ltd., held on September 26, the directors recommended a final dividend on the ordinary stock of 4½d. per 10s. unit less income tax at 9s. 6d. in the £, making 9d. per 10s. unit less income tax for the year.

Record Iron and Steel Carryings by British Railways.—For the third consecutive week British Railways have carried a record tonnage of iron and steel; 235,919 tons were conveyed from principal iron and steel works during the week ended September 27, some 15,000 tons more than the previous highest figure. During the 48 hr. ended 6 a.m. on October 6, 363,210 tons of coal were conveyed by rail making the total for the week 3,201,180 tons, the highest weekly total since June.

Return of Premium Grade Petrol.—Commenting on the statement by the Minister of Fuel & Power, Mr. Geoffrey Lloyd, that premium grade petrol will become available on February 1, 1953, Mr. Leonard Sinclair, Chairman & Managing Director of the Esso Petroleum Co. Ltd., has pointed out that this will facilitate much improved performance and more economical running, and enable British car manufacturers to design higher-compression engines to compete in overseas

markets. What is perhaps more important, he adds, is that oil companies in Britain will be able to go right ahead with their refinery programmes and so make their maximum contribution to the economic strength of the nation.

Institution of Locomotive Engineers.—Mr. W. C. Ikeson will read a paper on "Development of the Oil Fired Locomotive" at a meeting of the Institution of Locomotive Engineers, to be held at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m., on Wednesday, October 22.

Air Fares to Continent Reduced.—Silver City Airways, which made substantial reductions in its charges for cars and bicycles on its cross-Channel air ferries on September 15, has reduced fares for passengers not accompanying vehicles on the Lympne-Le Touquet route. The single fare has been cut from £2 10s. to £2 and the return from £4 10s. to £4.

Institution of Railway Signal Engineers.—London meetings of the Institution of Railway Signal Engineers have been arranged during the 1952-53 session as follows: October 16, "Modern Signal Aspects on the Netherlands Railways," by Mr. J. H. Verstegen; November 19, "Track Circuits in d.c. Electrified Areas," informal discussion on paper by Mr. D. G. Shipp (paper read in London, March 5, 1952); December 12, "Running Line Capacity," by Mr. B. F. Wagenrieder; January 13, 1953, "Inductive Interference from Electric Power Lines and Traction Circuits," by Mr. D. R. Turner; February 18, "Power Signalling Equipment. Design and Performance Related to Installation and Maintenance," by Mr. L. J. M. Knotts; March 10, "Sequence Switch Interlocking," by Mr. J. B. Griffiths; April 8, Annual General Meeting. Meetings will be held at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. At a meeting to be held at the Westinghouse Brake & Signal Co. Ltd. Chippenham Works, at 6 p.m. on March 4, 1953, Mr. L. J. M. Knotts will read a paper on "Power Signalling Equipment. Design and Performance Related to Installation and Maintenance."

Best-kept Station Gardens in Scotland.—Kinross Junction for the fifth successive year has won a special "A" prize of £10 in a competition for the best-kept gardens open to all stations in the Scottish Region, for which there were 262 entries; a similar prize goes to Kingennie on the Dundee East—Forfar direct line. Gleneagles and Racks (Dumfries-shire) each receive a special "B" class prize of £8, while £6 each goes to special "C" class winners: Helensburgh, Kildonan (Sutherland), Morningside Road (Edinburgh), Newport West (Fife), North Berwick, and St. Monance (Fife).

Autumn Meeting of O.R.E. Control Committee.—The autumn meeting of the Control Committee of the Office de Recherches et d'Essais, the research organisation (located at Utrecht) of the International Union of Railways, was held in England on September 29-October 1. Between formal meetings a visit was paid to the British Railways chemistry, engineering, metallurgy, physics, textiles, and protective coatings laboratories at Derby. At a luncheon at the Abercorn Rooms, Liverpool Street, on September 29, Mr. John Elliot, Chairman, supported by Mr. R. A. Riddles and Mr. J. C. L. Train, Members of the Railway Executive, welcomed the Committee and wished it success in its deliberations. Mr. F. Q. den Hollander, General Manager of the Netherlands Railways and Chairman of the O.R.E. Control Committee, expressed his admiration of British Railways research organisation and facilities. Others present included :—

Messrs. E. G J. Upmark, General Manager of the Swedish State Railways ; T. M. Herbert, Director of Research, and E. S. Cox, Executive Officer (Design), Railway Executive ; Parmantier, French National ; P. L. N. Ghilain, Belgian National ; Cuttica and Diegoli, Italian State ; and Flemming and Recker, German Federal Railways.

Liverpool—Belfast Service Christmas Arrangements.—It is announced by the Belfast Steamship Company that sailing tickets will be required between Liverpool and Belfast on Friday, December 19 and Tuesday, December 23, and Belfast and Liverpool on Friday, December 26.

Institute of Transport Congress, 1953.—The 1953 Congress of the Institute of Transport will take place in Glasgow from July 1-3, inclusive. The programme will include papers by Sir Reginald H. Wilson, Comptroller, British Transport Commission, and Dr. W. H. Glanville, Director of Road Research, Road Research Laboratory.

Lunch to L.M. Region Mayors.—Six members of British Railways, London Midland Region, who have been elected mayor this year were entertained to lunch at the Euston Hotel recently. Their host was Mr. J. W. Watkins, Chief Regional Officer, who had issued the invitations so that he could extend to each his personal congratulations. The six railwaymen are:

Messrs. F. Roberts, Machinist, Mayor of Crewe ; J. Gilhooley, Engine Driver, Mayor of Widnes ; W. E. Varnals, Road Motor Driver, Mayor of Shoreditch ; P. Griffiths, Sheet Repairer, Mayor of St. Helens ; E. Bond, Signalman, Mayor of Newcastle (Staffs.); L. C. Johnson, Archivist, British Transport Commission, Mayor of Watford.

Greenore Line may be Abandoned.—The Northern Ireland Ministry of Commerce has granted permission to the Dundalk, Newry & Greenore Railway to abandon the few miles of its track that lie inside Northern Ireland between Newry and the border. Earlier this year the Northern Ireland Transport Tribunal allowed the company to discontinue services on the Northern Ireland section of its line. Authority to abandon the line had to be sought under a separate procedure from the Ministry and the company will now be free to lift and sell the track and other equipment and to dispose of buildings and the land the track now occupies.

Railway Film Specialists' Annual Conference.—The annual conference of railway film specialists under the auspices of the Union Internationale des Chemins de Fer (U.I.C.) took place recently in London at the initiative of British Railways; delegates from nine countries participated. In addition to discussions and shows of various contemporary staff training or documentary films made by, or for, the member administrations, the programme included an inspection of a B.R. cine coach at Euston, and a visit to the television studios at Shepherd's Bush, by courtesy of the B.B.C. Mr. C. E. R. Sherrington, Chairman, Special Committee Exchange of Documentation (U.I.C.), welcomed the delegates at the inaugural session, after which the chair was taken by Dr. Max

Presentation to Miss Pearl Wadham

Sir Michael Barrington-Ward, Member, Railway Executive, making a presentation to Miss Pearl Wadham on the occasion of her recent retirement. Reference to Miss Wadham, who had been Secretary to eight G.E.R. and L.N.E.R. General Managers, and latterly to Sir Michael Barrington-Ward at Marylebone, was referred to in our October 3 issue

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

DRAUGHTSMEN required by Gloucester Railway Carriage & Wagon Company, Gloucester, preferably with Steel Car or Diesel Car experience. 5-day week. Pension Scheme in operation. Apply LOCAL MINISTRY OF LABOUR AND NATIONAL SERVICE.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Methods. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. Price 20*s.* By post 20*s.* 6*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

CROWN AGENTS FOR THE COLONIES

COST ACCOUNTANTS required by the Nigerian Government Railway for one tour of 18 to 24 months in the first instance either (a) on temporary terms at a commencing salary including allowances according to age and experience in the scale £807 rising to £1,631 a year, plus gratuity on satisfactory completion of service at rate of £25 or £37 10*s.* according to salary, for each 3 months, or (b) with prospect of pensionable employment at a commencing salary including allowances according to age and experience in the scale £750 rising to £1,480 a year. Outfit allowance £30 or £60. Free passages for officer and wife and assistance towards cost of children's passages or their maintenance in this country. Liberal leave on full salary. Candidates should preferably be members of one of the recognised bodies of professional Accountants. Applicants now serving with British Railways are eligible for secondment and should apply through their local officers. Apply at once by letter stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting on letter M.33211 E. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

APPLICATIONS are invited by well-known manufacturers of iron and steel on the North East Coast for a RAILWAY ENGINEER to supervise the installation of railway systems in connection with new works and other large scale developments. Applicants should be familiar with all modern standards of track equipment and capable of co-ordinating works' and railway contractors' staffs on site. Good salary and participation in Company's Superannuation Scheme. Reply Box 613, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

WANTED—Early North Midland Railway and Midland Railway publications. Write in first instance stating title and year to A. J. TURNER, 56, Boulton Lane, Alvaston, Derby.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s.* 6*d.*—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s.* By post 2*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Strauss, Secretary-General of the Swiss Federal Railways. At a dinner given by the Railway Executive for those taking part in the Conference, Mr. Sherrington was supported by Messrs. R. H. Hacker and D. S. M. Barrie (Railway Executive) and Edgar Anstey (Films Officer, B.T.C.); those present also included:—

M. G. Harrand (U.I.C.); Dr. Kurze, Dr. Lutz, and Herr Gunther (Germany); Dr. Buller (Austrian Federal Railways); M. Schouleur (S.N.C.B.); M. Censier and M. Barjot (S.N.C.F.); Messrs. J. Masterton (British Railways delegate) and D. S. Teague (L.T.E.); Dr. Ing. Giov. Robert (Italian Railways); M. Max Vet (Netherlands Railways); M. Magne Ronningen (Norwegian State Railways); Dr. Max Strauss and D. E. Schenker (C.F.F. Switzerland); Messrs. G. Wynne Davies, George Dow, M. B. Thomas, W. B. Addinall, and B. T. Beken (British Railways); H. P. B. Betlem (Research Information Division, B.T.C.).

Rome-Milan Express Derailed. — The Rome-Milan express was derailed near Reggio Emilia on October 1, and some four persons were killed. The train broke into two parts and the electric locomotive and three coaches overturned. One coach hit a stationary goods train on another track and was completely wrecked.

Road Accidents in July.—Casualties on the roads of Great Britain in July were 20,998, including 455 killed, 5,122 seriously injured, and 15,421 slightly injured, as compared with a total of 21,811 in July, 1951. This is a decrease of 813. Preliminary figures (subject to adjustment) for August show that total casualties were 20,881, compared with 21,819 a year ago. The number reported as killed is 423 (compared with 470) and seriously injured 5,079 (compared with 5,349). Road casualties for every month this year, except April, have been less than for the corresponding month of 1951.

Meeting on Steel Corrosion.—A meeting organised by The Iron & Steel Institute in conjunction with the British Iron & Steel Research Association, to discuss papers on the corrosion of steel under phosphate coatings and protective finishes, will be held at the offices of The Iron & Steel Institute, 4, Grosvenor Gardens, London, S.W.1, on Tuesday, October 28, beginning at 2 p.m. Mr. H. T. Shirley, Chairman of the Corrosion Committee of B.I.S.R.A., will be in the chair. The papers to be discussed have already been published in the *Journal of The Iron and Steel Institute* in the issues indicated, and cover the following subjects: "Phosphate Coatings as a Basis for Painting Steel"; "Corrosion by Retained Treatment Chemicals on Phosphated Steel Surfaces"; "Tentative Analytical Tests for Phosphate Coatings on Steel"; "Second Report of the Methods of Testing (Corrosion) Sub-Committee." The meeting will be open to all interested in the matters under discussion. There will be no charge for admission, but tickets will be required, and can be obtained from the Secretary of the Iron & Steel Institute.

Train Fire in New York Tunnel.—Burning oil in a heavily-loaded suburban electric train running through the Hudson River Tunnel leading to the Pennsylvania Station, New York, on October 2, caused distress to many passengers. After the train had been propelled by a relief electric locomotive into the Pennsylvania Station, three passengers and three of the train crew received oxygen treatment.

Withdrawal of Wickham Market—Framlingham Passenger Service.—On and from Monday, November 3, the passenger train service will be withdrawn from the following stations and halts on the Wickham Market—Framlingham branch, Eastern Region: Marlesford, Framlingham, Hacheston Halt, and Parham Halt. Hacheston Halt will be closed completely. Eastern Counties bus services will be modified accordingly. British Railways cartage services will continue to be available for parcels traffic.

State of Bahia South Western Railway.—The report of the State of Bahia South Western Railway Co. Ltd. for the three years to April 30, 1952, states that doubts recently have been expressed on the part of the Brazilian Government as to whether the agreement of June 7, 1949, whereby the administration and operation of the company's railway system was taken over, was in accordance with the authority conferred by the law of July 31, 1948. The agreement, the report states, was executed in the United Kingdom by a representative of the Brazilian Government who was certified as being fully and lawfully empowered by that Government to act on its behalf. Negotiations for the fulfilment of the contract continue.

Board of Trade Directory.—The *Board of Trade Journal* this week publishes as a supplement a *Board of Trade Directory*. From time to time the board has received requests for a guide to the functions of its various sections, to assist businessmen in their dealings with the department. The present directory is intended to provide all the information of this kind which will not rapidly become out of date. A complete list of the various sections of the Board is included, with their functions, addresses, and telephone numbers; there is a comprehensive alphabetical index of subjects, giving the sections responsible for each; and there is a detailed list of the various industries for which the Board of Trade, the Ministry of Supply, and other ministries have primary responsibility in such matters as allocation of materials. Copies may be obtained from Her Majesty's Stationery Office, P.O. Box 569, London, S.E.1, price 9d. (10½d. including postage).

Collision at Harrow & Wealdstone, L.M.R.—At 8.20 a.m. on October 8, the 8.15 p.m. express from Perth to Euston ran into the back of the 7.31 a.m. train from Tring to Euston as the latter was standing in Harrow & Wealdstone Station, London Midland Region, the wreckage being thrown across the down fast line. The 8 a.m. express from Euston to Liverpool and Manchester, which was double-headed, collided with the wreckage, as the result of which all six tracks of the L.M.R. Western Division main line were blocked. At the time of going to press, 61 passengers were reported to have been killed and 81 were detained in hospital. Mr. Alan Lennox-Boyd, Minister of Transport, sent telegrams to Lord Hurcomb, Chairman of the British Transport Commission, and to Mr. John Elliot, Chairman of the Railway Executive, expressing his great distress and his sympathy with the relatives of those who had lost their lives and with the injured. Lord Hurcomb replied on behalf of the B.T.C., thanking all concerned who had rendered prompt aid after the accident. Mr. Lennox-Boyd postponed his journey to the Conservative Party Conference at Scarborough so as to visit the scene of the accident, where he was accompanied by Lord Hurcomb, Mr. Elliot, and Mr. J. W. Watkins, Chief Regional Officer, London Midland Region.

B.S. for Electric Signal Lamps.—The British Standards Institution has published a revision of B.S. 469, "Electric Lamps for Railway Signalling." The form in which performance requirements are stated has now been brought into line with that used in other British Standards for electric filament lamps, and the types of lamps

which are preferred for suitable standards are indicated in the tables in heavy type. Information is also given as to the effect of a variation in voltage on watts, lumens, and life. This new edition includes lamps for railway signalling for voltages up to and including 110 volts. It provides information on dimensions, insulation, filaments and marking. Test conditions for cap attachment, insulation, and life are specified. Copies may be obtained from the British Standards Institution, Sales Branch, 24, Victoria Street, London, S.W.1, price 4s.

Forthcoming Meetings

October 11 (*Sat.*).—Permanent Way Institution, London Section, joint meeting with Birmingham Section members, at Birmingham.

October 11 (*Sat.*).—Ticket & Fare Collection Society, at 32, Russell Road, Kensington, W.14, at 2.30 p.m. Annual General Meeting.

Until October 11 (*Sat.*).—Photographic Exhibition organised by Railway Correspondence & Travel Society in association with the Railway Photographic Society, at Railway Executive Headquarters, 222, Marylebone Road, N.W.1.; open between 11 a.m. and 8 p.m.

October 13 (*Mon.*).—Institute of Transport, at the Jarvis Hall (R.I.B.A.), 66, Portland Place, W.1, at 5.45 for 6.15 p.m. Presidential Address, by Mr. C. T. Brunner.

October 13 (*Mon.*) to 18 (*Sat.*).—Centenaries Exhibition at Kings Cross Station; open between 10 a.m. and 8 p.m.

October 14 (*Tue.*).—Permanent Way Institution, Leeds Section, at the Leeds Church Institute, Albion Place, Leeds, 1, at 7 p.m. "Fastenings," by Mr. J. C. Loach.

October 14 (*Tue.*).—South Wales & Monmouthshire Railways & Docks, Lecture & Debating Society, at the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. "Port of London," by Mr. L. E. Ford, General Manager, Port of London Authority.

October 16 (*Thu.*).—Diesel Engine Users' Association, at Caxton Hall, Westminster, S.W.1, at 2.30 p.m. Presidential Address, "Diesel Digestion," by Mr. Gerald B. Fox.

October 16 (*Thu.*).—Institute of Transport, Northern Ireland Section, at 21 Linenhall Street, Belfast, at 6 p.m. "Multi-Engined Diesel Train Development," by Mr. J. D. Reid.

October 16 (*Thu.*).—Permanent Way Institution, Manchester & Liverpool Section, "Manchester and Sheffield Electrification," by Mr. A. H. Emerson, Electric Traction Engineer, Manchester.

October 16 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Room, Bishops Bridge Road, Paddington, at 5.45 p.m. "Costing of Road and Railway Traffic," by Mr. A. W. Tait, Director of Costings, British Transport Commission.

October 16 (*Thu.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, W.C.2, at 6 p.m. "Modern Signal Aspects on the Netherlands Railways," by Mr. J. H. Verstegen.

October 16 (*Thu.*).—Institution of Mechanical Engineers. Annual Dinner, at the Dorchester Hotel, W.1, at 7 for 7.30 p.m.

Railway Stock Market

Stock markets have been firmer this week and rather more active, helped by news of the gold and dollar reserve position and the balance of payments, but it is realised that much more must be done, and it is generally assumed that the Conference of Commonwealth Ministers next month will make important proposals for strengthening the sterling area. Investors are following the safety first policy of favouring British Funds rather than industrial shares, because of the general tendency to await developments in engineering wages unions of the indications, confirmed by interim dividend announcements and progress reports, that profits in many industries are well below the levels of a year ago. Even so, most companies have good prospects of maintaining their dividend rates, and on this basis many shares show attractive yields of current prices. The prevailing view is that, although for the time being the main emphasis will be on British Funds, indications are that in due course industrial shares will receive much more attention.

Now that the strong outburst of activity in Japanese and other foreign bonds is less pronounced, there is a tendency for foreign rails to attract more attention.

United of Havana stocks have been prominent in anticipation of the scheme to reorganise the capital. This, by simplifying the capital structure, would, it is thought in the City, facilitate any take-over offer that may come along. The main activity has been in the 5 per cent. (1906) debentures, which it is assumed, may be shown by the reconstruction scheme to be relatively undervalued. They have improved to 18 at the time of going to press and have changed hands up to 18¼. The Cuban debentures at 42 were also better, while the 4½ per cent. Western debentures rose to 22; the 4 per cent. debentures were better at 9½.

There has also been more business in Manila Railway debentures, on the view that, looking ahead and assuming a reasonable settlement on the arrears on the holding of Manila Railroad bonds, they are likely to be worth more than current prices. The "A" debentures have changed hands around 80 and the "B" debentures around 65¼, while the preference shares were 8s. 9d., and business in the ordinary shares was recorded up to 3s.

There are still some optimistic buyers of old Russian railway bonds. Russian South Eastern have been dealt in at 10s. Speculators last year made moderate profits out of Russian bonds, which in some cases moved between 2s. 6d. and 20s.; but they run the risk that when they wish to sell it may be very difficult to find buyers.

The better trend in traffics has drawn attention to Costa Rica Railway stocks. The 6½ per cent. debentures were 58 and the income debentures 38, while the ordinary stock has changed hands up to 6¼.

Brazil Rail bonds were also 6¼, while there has been more business in Antofagasta ordinary, and preference around 10½ and 51 respectively.

Mexican Central "A" debentures eased to 71½. San Paulo 10s. ordinary units were 11s. 1½d. Taltal shares kept at 15s. and Nitrate Rails were 18s. 6d.

Canadian Pacifics eased, but later firmed up to $60¼, while the preference stock was 64¼ and the 4 per cent. debentures 80¾. There was again a big business in White Pass & Yukon shares, which, however, have not held best levels at $23¼, while the 5 per cent. convertible debentures were 83 and the 4½ per cent. debentures 31.

Engineering and kindred shares were quiet and inclined to recede further, awaiting developments in the discussions over wage claims.

Guest Keen were 53s. 3d., Vickers 43s., John Brown 45s. 6d., but market talk of possibilities of a bigger dividend put T. W. Ward higher at 76s. Ruston & Hornsby firmed up to 37s. Babcock & Wilcox were 70s. 9d. and Thornycroft 51s. 3d. Another factor tending to make for a cautious attitude is disposition for buyers to await Government plans for denationalising steel. If engineering companies have an opportunity to buy back over their steel assets, some may have to raise additional capital to do so.

Elsewhere Beyer Peacock have held steady at 31s., but Hurst Nelson eased from 49s. 6d. to 49s. North British Locomotive were 18s. 3d. In active dealings Central Wagon came back sharply to 91s., but later recovered to 92s. 6d. Vulcan Foundry receded 6d. to 23s., Birmingham Carriage were 32s. 6d., Wagon Repairs 5s. shares 12s. 9d., Charles Roberts 5s. shares 21s. 6d., and Gloucester Wagon 10s. shares changed hands around 12s.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week, or month ended	Traffics for week: This year	Traffics for week: Inc. or dec. compared with 1950/51	No. of weeks	Aggregate traffics to date: Total 1951/52	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Cen. America	Antofagasta ...	800	26.9.52	163,620	+ 18,340	39	5,915,180	+ 1,298,200
	Costa Rica ...	281	Aug., 1952	c1,393,110	+ c97,299	9	c2,856,268	+ c287,598
	Dorada	70	Aug., 1952	38,470	+ 1,494	35	273,997	— 14,450
	Inter. Ctl. Amer....	794	July, 1952	$1,032,978	— $15,127	30	$7,977,146	— $2,610
	Paraguay Cent. ...	274	26.9.52	G638,296	+ G304,695	11	G7,413,918	+ G3,094,776
	Peru Corp. ...	1,050	Aug., 1952	$9,656,000	+ $997,000	9	$19,162,000	+ $2,578,000
	" (Bolivian Section)	66	Aug., 1952	Bs.15,591,000	+ Bs.1,629,000	9	Bs.31,978,000	+ Bs.4,987,000
	Salvador	100	June, 1952	c169,000	+ c81,000	52	c2,067,000	— c49,000
	Taltal	122	Aug., 1952	$2,927,000	+ $862,000	9	$5,187,000	+ $1,332,000
Canada	Canadian National†	23,473	Aug., 1952	19,081,000	+ 746,000	35	147,991,000	+ 12,221,000
	Canadian Pacific† ...	17,037	Aug., 1952	12,953,000	+ 866,000	35	100,059,000	+ 7,048,000
Various	Barsi Light* ...	167	Aug., 1952	30,780	+ 8,280	22	169,920	— 21,430
	Gold Coast ...	536	Aug., 1952	253,854	+ 32,678	21	1,434,206	+ 152,894
	Mid. of W.Australia	277	July, 1952	50,950	— 1,857	4	50,950	— 1,857
	South Africa ...	13,398	6.9.52	1,949,449	+ 84,252	23	44,864,520	+ 1,832,470
	Victoria	4,744	May, 1952	2,183,278	+ 229,476	48	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1